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THE MAGAZINE FOR INFORMATION EXECUTIVES

FIRST OF TWO SECTIONS

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What's Your Move?

Special Report on
Strategic Planning

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with Leading
Strategist
John Henderson
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TruServ CIO
Paul Lemerise

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SPECIAL REPORT Strategic Planning



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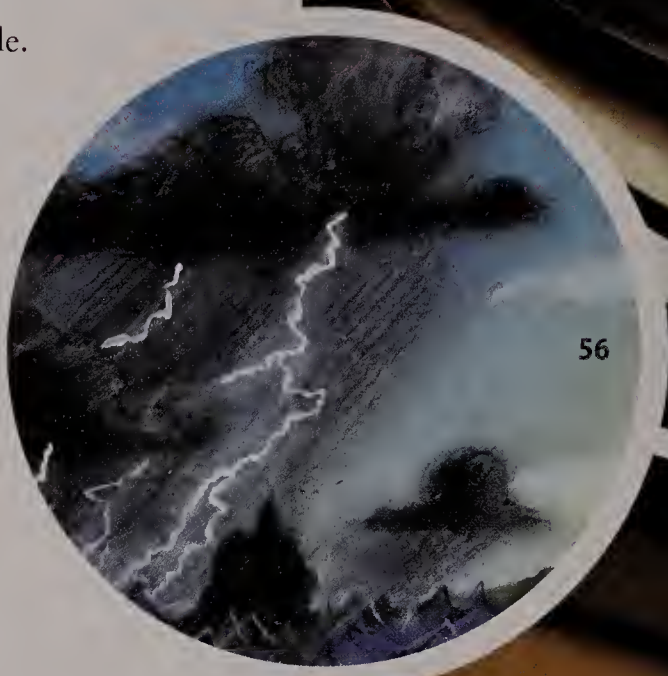


ON THE COVER:

Strategic planning keeps TruServ CIO Paul Lemerise a few moves ahead of the game.

Cover photo by Greg Gillis

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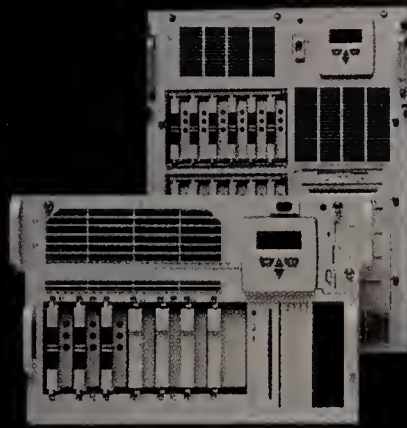
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REALITY BYTES Contrary to what you may have heard, the Internet hasn't changed the world. Not yet anyway.

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In Box

LETTER FROM THE EDITOR, READER FEEDBACK
AND HOW TO REACH US

"IT strategy is not about data definitions; it's about thinking through what's happening in the IT marketplace and understanding how that creates both opportunities and threats."

—John C. Henderson

Chairman, Department of Information Systems
Boston University's School of Management



After a few years of stagnation, IT strategic planning is enjoying a comeback. Ranked the second-most critical issue on the Computer Sciences Corp. (CSC) annual survey of top IS issues 10 years ago, it dropped steadily from second in 1988 to 10th in '92 to 14th in '95, until finally the folks at CSC simply took it off the survey altogether. That's too bad. I suspect if they'd left it on, they would have noticed a startling jump back to it in 1997.

But strategy has undergone a pretty significant transformation in its rebirth.

As John Henderson points out above, it's not about data definitions anymore. There is an increased emphasis on aligning IT planning with a company's business focus rather than simply putting together blueprints for catching up with technology advances, writes Senior Writer Mindy Blodgett in "Game Plans," beginning on Page 42.

With that shift in focus has come a shift in what works and what doesn't. For example, while steering committees are one of the most frequently employed means of developing IT strategic plans, CIOs rank them low in effectiveness, according to a survey of 301 IT executives conducted last fall by CIO Communications Inc. and ICEX Inc. That doesn't mean steering committees are a bad idea but rather that CIOs need to rethink their makeup, operating procedures and goals. In "Clear Steering," beginning on Page 56, Senior Writer David Pearson profiles three companies to find out what makes a great steering committee.

In our interview with Henderson beginning on Page 50, the BU professor (and director of the university's Systems Research Center) offers a three-step prescriptive for CIOs to guide their planning efforts: Keep a balance between vision and operations; stay at least as focused on the business as you are on the dynamics of the technology market; and, finally, remember that strategy is a people-intensive process.

This theme runs throughout both this issue and the CIO/ICEX survey. Effective planning means collaborating across the enterprise. If I had to point to a single thing to explain what's different about the planning process now compared with 10 years ago, that would be it.

How has IT strategic planning changed at your company? Please let us know by writing to letters@cio.com.

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In Box

TWO VIEWS ON T.C.O.

I almost threw your magazine in the round file when I read your editorial about TCO ["Re: Total Cost of Ownership," *CIO* Section 2, Oct. 15, 1997]. Then I realized you were being provocative for a reason, perhaps to cause discussion.

Most successful companies are neither cost-focused nor revenue-focused, but bottom-line focused. This distinction is crucial because one of the most important measures of customer value is the ability to generate profits to fund improvements and growth.

Successful companies realize that their profits represent a fraction of their revenue (10 percent to 25 percent). A company that makes 10 percent profit on sales must generate \$10 in revenue to add \$1 to the bottom line. On the other hand, \$1 in cost reduction on the same volume of sales will add the full \$1 to the bottom line. This explains why successful companies usually have to manage their costs, given that customers have choices in a free market and will choose the value they need at the lowest cost available.

CIOs will need to understand the fundamentals of economics and bean counting before they'll be accepted at the strategy level in most businesses.

R.K. Roof

*Business Services Manager
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I enjoyed your piece on TCO ["The PC Price Tag," *CIO* Section 2, Oct. 15, 1997]. As a person who has spent a lot of time looking at TCO models and Total Value of Ownership (TVO) models, I thought I would share a comment or two with you.

First, not all TCO models focus exclusively on costs and cost reduction. Maybe it's a misnomer, but some focus on the cost savings associated with productivity improvements.

Second, some models even consider the revenue enhancements associated with having a network up and available or the revenue generated from having business-critical information available to end users at the exact moment they face an important business decision.

Gerry Lameiro

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SAP IMPLEMENTATION WOES

As I read about Visio's migration to SAP's R/3 ["The Big Uneasy," *CIO* Section 1, Oct. 15, 1997], I had a feeling of déjà vu. Smith Sport Optics Inc. is a company similar in size to Visio. In the spring of 1993, our CFO decided to replace our existing home-grown computer system with an enterprise package much like R/3. We were on a schedule to implement six modules within six months. We got five modules up within five months, and in the sixth month we implemented the manufacturing module. It was a disaster. The manufacturing

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In Box

module never worked as advertised. We nearly ran out of finished goods inventory at one point because our warehouse people were not trained properly. The work-in-process and just-in-time features [promised by the system] either over- or understated inventory, which affected distribution, purchasing and forecasting. The consulting group leading the installation couldn't figure out why the system was misbehaving. We limped along for months with the malfunctioning manufacturing system and tolerated the inflexible other modules we installed.

The other huge problem we had was with the vanilla reports that came with

president of Smith, decided we should replace the existing enterprise system. Our search criteria was simple: Find a system that would work for us without changing the way we do business, that was flexible and real-time and that would have decent reporting the day we turned it on.

The package we gave the thumbs-up to was developed by a consulting group that came in with a core system, and after an eight-month process of modification and additions we had a system that was truly ours.

The eight modules we used were faster, more friendly and more familiar than anything we had in the previous system. And it cost us one-third of what Visio spent on its new system, hardware included.

No matter what kind of face Visio tries to put on it, R/3 will never be the system employees truly embrace unless they are willing to spend millions of dollars more to make it "their" system.

I wish them the best of luck
in phase two.

Steve Barnes

MIS Director

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WE HAD A LITTLE LIST

I was recently made aware of Jim Nash's article on call centers ["Fast Fone Farms, Fat Profits," *CIO* Section 1, Oct. 1, 1997]. While the article was interesting and informative, I was surprised and disappointed to see that Nortel (Northern Telecom) was not included in the listing of key vendors, "Where to Buy It." A 1997 report from Dataquest on the U.S. market places Nortel as number one in new systems shipped to all call centers.

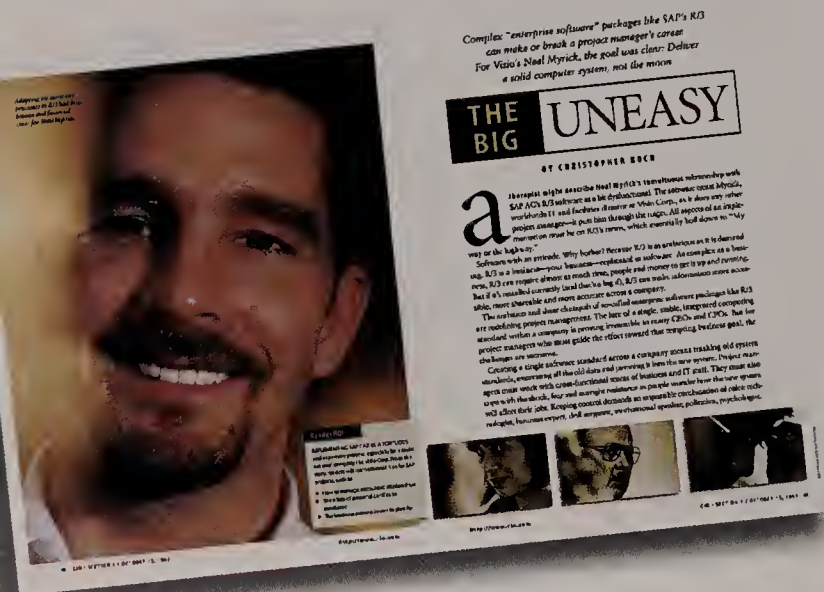
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the system. We referred to them as “hernia reports” because of the sheer volume of paper they generated. Since we didn’t have rooms full of employees in each department to sift through the reports and we couldn’t afford to have the consulting group generate useful reports, we worked around the system, producing reports using a query language that summarized the data. It took us five months to get a decent sales report out of the system. We had the same problem Visio had with R/3’s standard reports: Some of them were useless.

We also had casualties in personnel and morale. Our new controller quit, there were numerous shouting matches between heads of departments and I witnessed people actually crying in frustration at their workstations. The new system cost the CFO his job at Smith, one year after we began the implementation.

In December 1994, my new boss, the



Editor's response: *Due to an editing error, we did not specify that the "Where to Buy It" list included only the vendors referenced in the article and was not intended to be comprehensive. CIO regrets any confusion this may have caused. In addition to Nortel and the vendors on that list, there are many fine call center solution providers.*

THINK GLOBALLY

When warning webmasters to watch our language, I think you committed a bit of a faux pas [“Local Color,” *CIO* Section 2, Dec. 1, 1997]. On the World Wide Web, what exactly is a “foreign audience”?

Please accept your own advice—rid your editorial of “the United States is the center of the world” type of thinking. In the global community, there are no foreigners, except those shady characters on *The X-Files*!

Michael Beirne

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Publisher's Note

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America's national and global lead in technology is not predicated on having more sand to build silicon chips, fiber cables and optical storage disks. This lead was built on a significant store of IT human resources, including thousands of American citizens who were

excited in the early '60s by President Kennedy's unprecedented call for applied technology.

Since then, our country has been fortunate to have the men and women with the vision and passion to create and manage technology products. Many of the notable Americans who have contributed to making our industry the country's largest are either retired or no longer involved in our business. So where are our future technology leaders?

Just as our industry has reached its pinnacle, the most compelling challenge we face is not a technical obstacle. It is this: We collectively face a critical shortage of IT professionals (a topic that *CIO* covered in depth in its last issue). The Department of Commerce and the Information Technology Association of America peg the number at 190,000 IT jobs that are currently unfilled.

Implications of this shortage are severe. Companies not able to hire enough IT workers to build new products will lose revenue and market share and most likely will go out of business. IT vendor companies struggling to hire workers to write code and design products will face the same fate. Paraphrasing Will Rogers' quote, companies not able to find the right people will not make their numbers. It's as simple as that.

Information technology will be even more of an enabling technology in the 21st century, and our country must address and solve this IT workforce shortage issue. Failure to do so is not an option.

Where are you in this area? Are you finding it difficult to fill open IT jobs on your staff? Are you paying higher salaries to keep existing staff? I'd like to hear from you. Think for a moment about your situation. What percent of your IT jobs are currently open? How long does it take to fill an open position? Send an e-mail to me at gary_beach@cio.com, and I'll share the results in a future column.

Gary J. Beach

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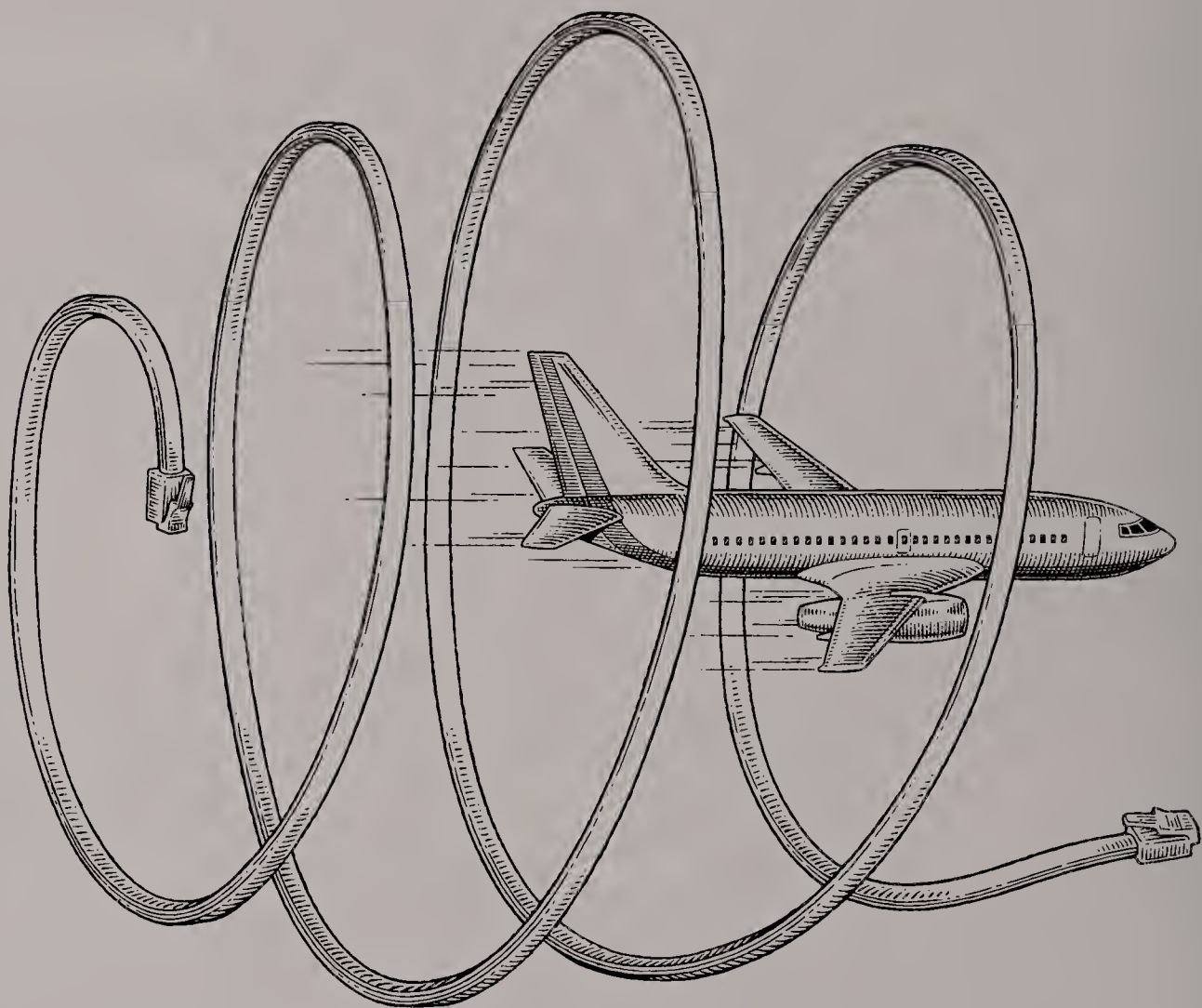
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ELECTRONIC COMMERCE

Remember when you used to spend rainy Sundays in heated games of Monopoly, performing such sophisticated financial maneuvers as trading Reading Railroad and the Electric Company for Park Place, Boardwalk and a Get-Out-of-Jail-Free card? Well today, two professors at the University of Texas at Austin's Center for Research in Electronic Commerce have developed a model for research and teaching that may remind you of those days. For the second year, the graduate students of Andrew B. Winston and Anitesh Barua are taking part in an electronic marketplace in

which information is the asset and dollars the means of exchange. In addition to training students to compete in the digital age, the model gives researchers insights into the performance of digital companies.

"Our goal is research into the

digital economy," says Winston.

The market works like this: Each student in the program is given \$10,000 worth of electronic credit. Depending upon whether the student is in such classes as marketing, technology or finance, among other business areas, he

Its First Real Job

DEEP BLUE

It was a dream existence that couldn't last forever. Deep Blue, IBM Corp.'s supercomputer that made its name by beating famed chess champion Garry Kasparov last year, has been given a new job. No more fun and games, at least for now; instead, the RS/6000 SP machine is focusing its energies on more practical arenas. For example, it is being used in molecular dynamics to help discover and develop new drugs for the pharmaceuticals industry; in financial services, it performs risk assessment at lightning speed; and it is being used in data mining and decision support.

Does this mean the end of the Deep Blue chess legend?

Not entirely. According to C.J. Tan, manager of the Deep Blue project at IBM Research in Yorktown Heights, N.Y.,

Deep Blue's new assignment doesn't necessarily mean it will never play chess again. In the meantime, though, a scaled-down (and less powerful) version of the machine—

known as Deep Blue Jr.—is still touring and giving demonstrations around the world. ■



ILLUSTRATION ABOVE BY BOB STAAKE; BELOW BY MARIAN HEIBEL

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Trendlines

or she becomes either a consumer or a producer of digitized products. For example, one group in a class may need data on some evolving technology for their course project; they can buy that information from one or more of the companies operated by their fellow students. Ultimately, the model serves as a mini economic system in which some students focus on developing successful electronic enterprises while others learn to be smart electronic consumers.

The marketplace itself is an intranet on which supply and demand create the price of information. This year, prices are posted. Next year, companies will be able to choose between posted prices and auction mechanisms. Want to know which way your group's project should jump? Well, how much will you part with to learn the insights gathered by other students who have chatted with the (real!) executives of Lucent Technologies or Cisco Systems Inc.? But watch your wallet: At semester's end, a student's report on operations and procedures will receive bonus points for every dollar in his or her account.

Barua points out that the structure is more than a simple simulation because "in our experiments, we are creating an electronic marketplace where the transactions are extremely important to both the buyers [for their course projects] and the sellers [for their course grades and an award certificate for the winning company]. In a simulation, the behaviors for active agents are specified."

Whinston and Barua are not yet ready to publish their preliminary results, but they are tracking trends. They believe that "we will witness clear patterns for successful companies," says Barua. Meanwhile, Whinston is pleased at how the program "creates an opportunity for [students] to pull together their skills from finance and marketing." Currently, the project has a student base of around 200 partici-

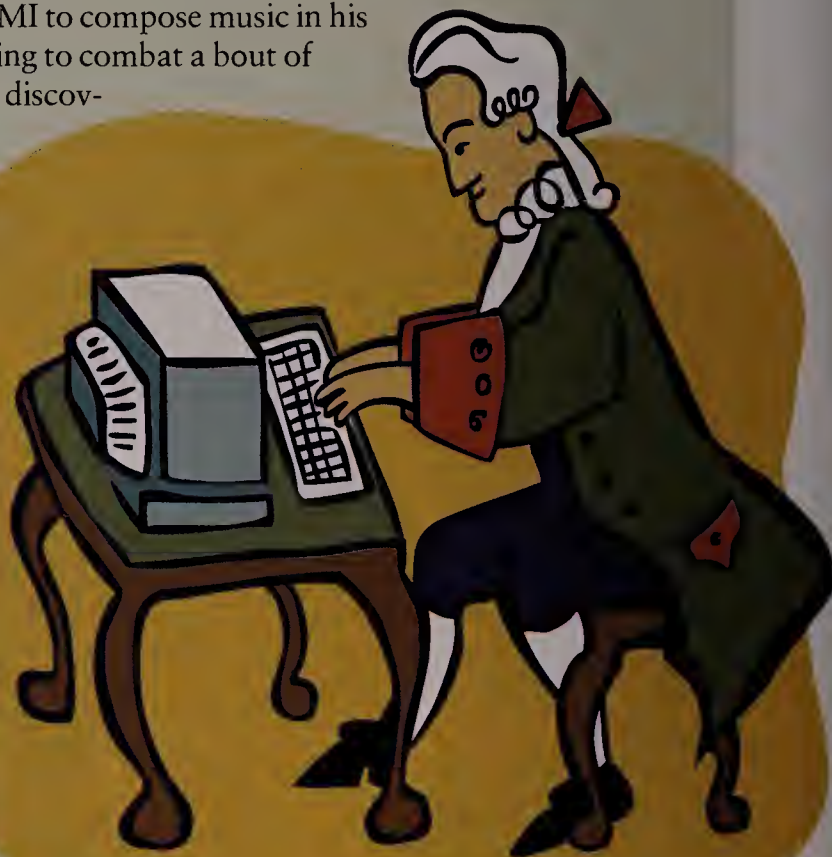
They May Be Dead, But They're Still Composing

MUSIC SOFTWARE It is said that old musicians never die, they simply decompose. But David Cope, a professor of music at the University of California at Santa Cruz, has invented a way to continue the work of such luminaries as Mozart, Bach, Stravinsky and Scott Joplin. His Experiments in Musical Intelligence (EMI) sound replication program is something like a writer's spellchecker or an accountant's adding machine: a mechanized way to help us compose unique thoughts.

Cope, an accomplished musician who has played both cello and piano professionally, argues that musical sequences can be broken down into patterns and that computers can recognize and replicate those patterns. When computer matching is vigorously applied to coded musical examples, the results can be remarkably close to the work of the original composer.

Cope originally wrote EMI to compose music in his own style. As he was working to combat a bout of writer's block, however, he discovered that people were much more interested in hearing another Prokofiev piece than a new, computer-generated form of music from a modern composer. So now Cope makes CDs containing such selections as Mozart's Symphony (1995) (Wolfie died in 1791) and a new Scott Joplin Rag (1988).

Cope's CDs, including his latest—entitled "Classical Music Composed by Computer"—are available through music stores. ■



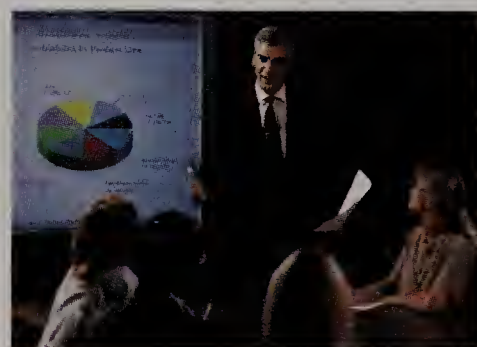
pants: among those are a number of students at the University of Southern California's Business School, where one of the program's graduates, Ramnath Chellappa, is now a faculty member and has his students negotiating online with the students back in Texas.

Not all students who participate in the program achieve market success. Says Whinston, "Just like companies in the real world, [only] some of these companies recognized and acted upon the synergistic and holistic choices of strategies, processes and technologies, and succeeded in the marketplace."

—Perry Glasser

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an Arab emirate and Sprint Communications Co. LP. According to company founder Andy Mauck, the vans can be simple corporate transportation or full-fledged entertainment centers—the application is subject only to the wishes of the customer and budgetary constraints. The mobile office concept has been among the most popular of all the options, however, with about 40 selling in the past year.

"Executives like them because they are finding they can have very fruitful meetings right at the development or customer site," Mauck says. "They can do presentations on the 48-inch screen, which motors down from the ceiling with the audio visual system. Corporations are looking at different ways of getting

their people to clients rather than always flying them." For more information, contact Mauck Special Vehicles at 614 777-9304. ■

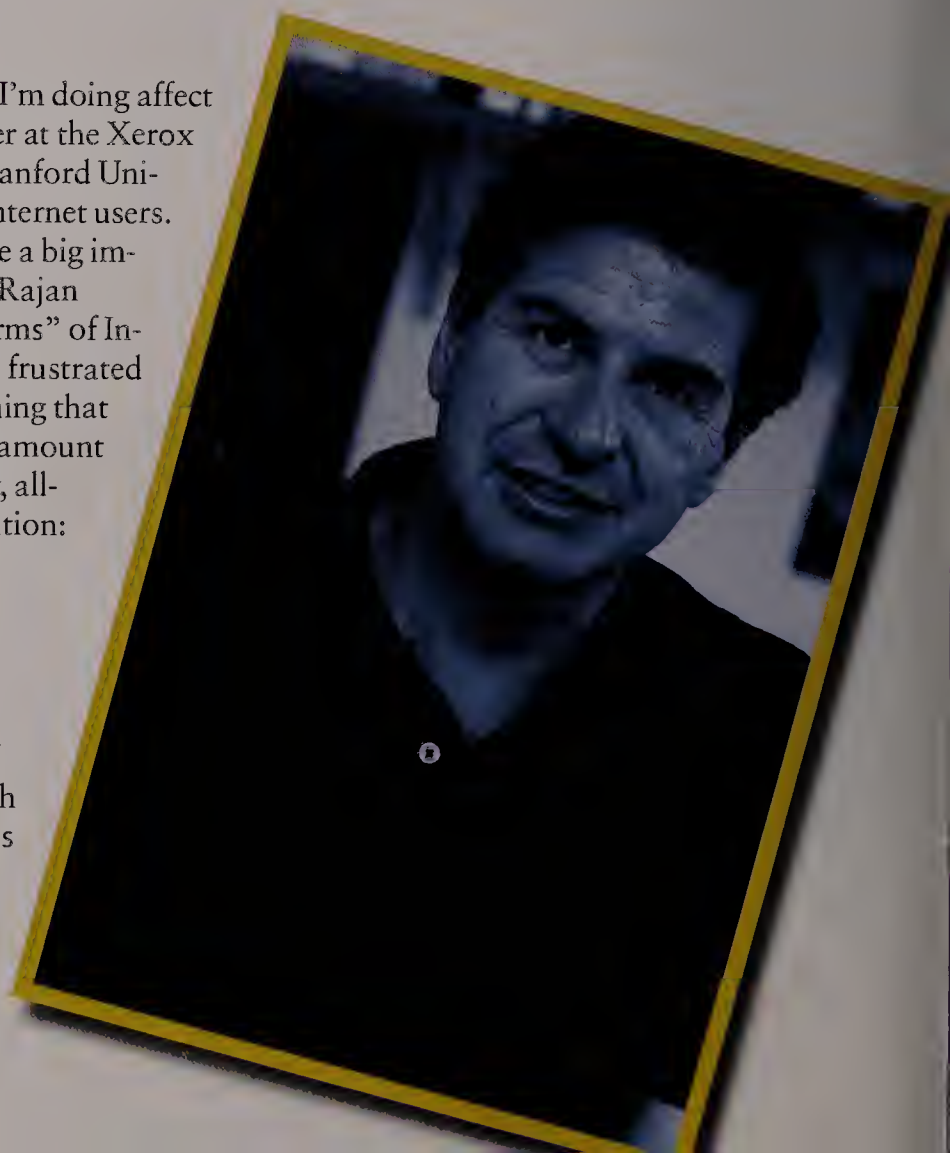
Decongesting the Net

INTERVIEW "But I'm just one person! How could what I'm doing affect the whole Internet?" Dr. Bernardo Huberman, a researcher at the Xerox Palo Alto Research Center and a professor of physics at Stanford University, has heard those words from the lips of too many Internet users. To convince such skeptics that their actions do indeed have a big impact on network traffic, Huberman and graduate student Rajan Lukose came up with a mathematical model to track "storms" of Internet use that lead to bursts of congestion, long waits and frustrated users. Then they put their findings in a social context, arguing that Internet congestion occurs when users, who pay the same amount no matter how much information they need, take a greedy, all-you-can-eat approach to the Internet. Their proposed solution: Put a price on the information.

CIO asked Huberman to discuss his theory.

Q. What motivated your study?

A. I've been working for quite a while on the dynamics of social dilemmas that go something like this: If you are with a large group splitting a bill at a restaurant, everyone tends to order an expensive meal because the total will be divided by a large number. If you order something moderate in price, you'll end up paying more anyway, so why should you? The problem exemplifies [the need for]



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Trendlines

common-good cooperation.”

Q. How does this relate to the Internet?

A. In the context of the Internet, it's the same—multiply that reaction by a couple of hundred million people and you get a big effect. With the Internet you can actually measure the pattern of cooperation in a very unobtrusive way. The Internet provides a fantastic opportunity for probing because when people feel anonymous they take more; because of that, we noticed that Internet congestion is very “bursty.”

Q. You're suggesting that Internet users be charged based on use?

A. This is where it starts to get controversial. [In] the restaurant, the problem would not exist if everyone ordered only what he could afford. On the Internet, everybody complains about congestion, but they don't realize they are causing it.

Q. Have you thought about any possible pricing schemes?

A. I believe it will evolve into a sort of tier system. Maybe private providers will start offering more services that they will charge for, in the same way that Federal Express charges more for the same services the U.S. Post Office provides. Or maybe there will be preference pricing as with the phone company: You might wait until 11 p.m. to use the Internet—when there's less congestion—because it will cost less. Or Web sites might pay for you to get their information in the same way that people mailing you information pay for the mailing.

Q. Would you be willing to pay for information on the Web?

A. Absolutely. If it's worth it.
—Meg Mitchell

Off the Shelf

Year 2000 Roundup

Managing 00: Surviving the Year 2000 Computing Crisis

Peter de Jager and Richard Bergeon,
John Wiley & Sons, 1997, \$19.99

The Year 2000 Software Crisis: Challenge of the Century

William M. Ulrich and Ian S. Hayes,
Yourdon Press, 1997, \$39.95

Year 2000 Problem: Strategies and Solutions from the Fortune 100

Leon Kappelman, International Thomson
Computer Press, 1997, \$44.99

THE TIME BOMB IN YOUR I.T. SYSTEMS IS SET TO GO OFF IN less than two years. If defusing it isn't at the top of your priority list, it should be.

The so-called millennium crisis is the kind that comes along only once in a lifetime, so you have no experience on which to draw. Fortunately, there are resources to turn to, including these three books. All three describe strategies and tactics for the preparation and project management that lie ahead. Their value to you will depend upon on your place within the IT organization.

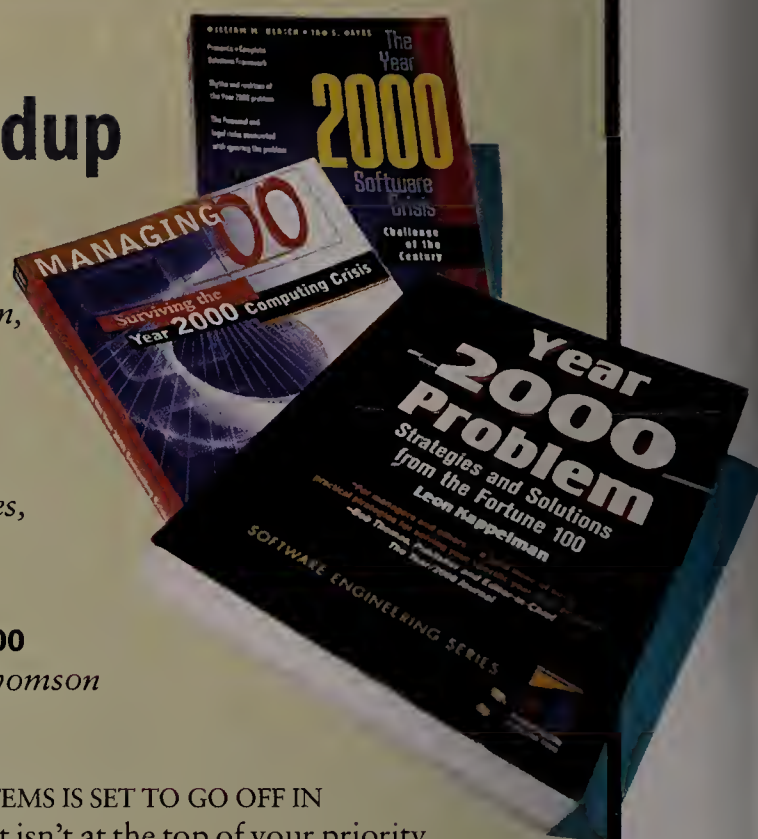
For those at the highest executive levels—up to and including the technically savvy CEO—there's *Managing 00: Surviving the Year 2000 Computing Crisis* by Peter de Jager and Richard Bergeon. De Jager, of course, is the tireless Paul Revere of the Y2K crisis, galloping across the IT countryside sounding the alarm. Bergeon is vice president of technology servers for a consulting firm. His firm and its products get mentioned just a little too often upfront, so a reader might wonder about the author's agenda. Beyond that, though, *Managing 00* is an easy-to-digest, nicely conversational guidebook for the CIO who wants to get his ducks and digits all in a row.

For an in-depth textbook on the Y2K challenge, check out *The Year 2000 Software Crisis: Challenge of the Century* by William M. Ulrich and Ian S. Hayes. Both authors are consultants who have studied the problem in depth. Written in a detached, academic style, this volume brings together all the nuts and bolts a CIO or a project manager would need to start rallying the troops. Some examples of these tactics: charts for contingency planning, checklists for team-member responsibilities, tables for estimating costs and a plethora of bulleted lists.

Year 2000 Problem: Strategies and Solutions from the Fortune 100 is an anthology of articles by 57 writers (including some from *Computerworld*, a CIO sister publication). As such, each chapter sports a different style and repeats the same warnings. However, the book is full of information and advice and boasts a useful list of resources, including some Web sites. An accompanying CD contains some of the articles in digital form, so they are searchable by topic, along with an application to test whether a PC is year 2000 compliant.

In addition to all the gloomy warnings, each of these books acknowledges the year 2000 storm cloud's silver lining: Once blue skies return, the 21st century could inaugurate a time of more efficient computer systems and a better understanding of what comprises your IT systems. That's a New Year's celebration to look forward to.

—Howard Baldwin



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Reporter's Notebook

NOTES FROM THE FIELD

Wanted: Intrepid Navigators

The future calls for CIOs to chart the strategic course of corporate success

FWARREN MCFARLAN TOLD A packed pavilion at the CIO Perspectives Conference in Naples, Fla., "By the time [information] technology matures, we will have fundamentally changed the nature of work and what we look for from life." McFarlan, senior associate dean at the Harvard Business School and keynote speaker at the conference held last October, has devoted the past 40 years to the study and implementation of information technology. To those who crowded the room to hear his high-energy presentation, "At the Intersection: IT and Corporate Strategy," one thing was eminently obvious: McFarlan, an IT pioneer and legend, remains in the vanguard of IT thought.

McFarlan confessed to his audience that his only regret is that he won't live to see the most exciting developments in his field. Those, he predicts, will unfold over the next century. "Right now, IT is still in the very early phases of development," McFarlan said.

Following the session, in the plush lobby of The Ritz-Carlton Hotel, the noted professor met with CIO Senior Writer David Pearson.

CIO: In your presentation, you said that effectiveness is now more important than efficiency. Rather than focusing all our energy on finding ways

to drive down costs, we should use IT to choose and implement the right initiatives. How can outsourcing help a CIO facilitate strategic effectiveness?

McFarlan: First, you can outsource to provide access to critical tech-

nologies that, for whatever reason, you aren't able to manage on your own payroll. Second, you can outsource to people with experience in particular applications, like SAP. And third, you can outsource to gain insight on how to accomplish a specific IT job in your particular industry. Look at EDS, CSC and IBM. They have all reorganized, creating groups able to approach the market with industry-specific expertise that



complements their applications and technology expertise.

It's important to note that, had this activity not taken place over the last couple of years, we would have seen the move toward outsourcing

CORNER IMAGE BY CARL TREMBLAY; PHOTO BY JOHN SOARES

WE'VE STRAIGHTENED SOME THINGS OUT.



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begin to lose steam and flatten. Instead, you find the jet engines revving up under outsourcing. In the next years, people will realize that outsourcing is the only way to stay in the game.

CIO: Do CIOs have options other than strategic outsourcing?

McFarlan: Well, they can beef up in-house. They can hire, retain and manage all the skills they lack. A CIO might say, "I'm going to pay, I'm going to relax dress codes and I'm going to create a work environment that may be quite counter to the culture of the rest of the organization in order to accommodate these outsiders as part of our company."

Last year, J.P. Morgan & Co. Inc. created a wonderful outsourcing deal. In my opinion, the company reaffirmed the really critical strategic pieces of its business by keeping them in-house. Keeping its core software skills—those related to designing new financial products—in-house, the company pushed the rest out to the very best technologists. Company managers lined up four partners to work with them in what they called the Pinnacle Alliance—CSC, Andersen Consulting, AT&T Solutions and Bell Atlantic Network Integration—to manage their commodity skills jointly. The alliance comprises about one-third of J.P. Morgan's technology expenditures, which total somewhere near \$1 billion a year.

CIO: Does outsourcing raise other management issues?

McFarlan: Whenever you outsource, there will be a contract. These days, you can hire specialists to help you work through and negotiate a contract that will remain viable in the long run. As a CIO, you outsource once or maybe twice, whereas contract specialists have conducted dozens and dozens—in some cases, hundreds—of these negotiations. They're much less likely than you to be fooled. The profession of middleperson has emerged to help the first-time negotiator deal with somebody whose business it is to negotiate outsource

Conference Consensus: IT Is It

Information technology is the wellspring of strategic advantage

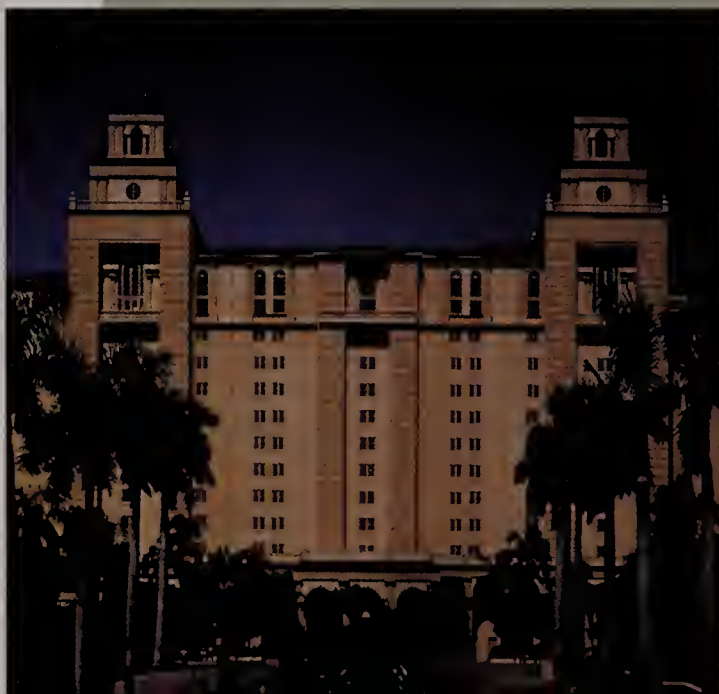
PARTICIPANTS LEFT NAPLES, FLA., A BIT SUNBURNED AND CARRYING a few extra pounds, but neither the champagne, chocolate and cigar receptions nor the decadent lunches on The Ritz-Carlton Hotel pavilion overshadowed the impact of the 17th CIO Perspectives conference. Elaborating on the theme "Core Competencies and Competitive Advantage: Think Internally, Act Externally," the conference offered CIOs presentations by esteemed leaders in the field while encouraging attendees to swap ideas with peers. If a few rounds of golf were added to the mix, all the better.

Two presenters, Wal-Mart Stores Inc.'s Senior Vice President and CIO Randall Mott and Capital One Financial Corp.'s Senior Vice President and CIO James Donehey, asserted that their companies' key competitive advantage is IT itself. Wal-Mart, Mott explained, treats every sales receipt as a crucial piece of customer intelligence. The IT department provides management with some 8.4 million updates a minute—updates that detail what customers choose to take home. "People think we got big by putting big stores in small towns," says Mott. "Really, we got big by replacing inventory with information." Similarly, Capital One's success springs from information technology that brings the right credit card product to the right customer at the right time for the right price. "We [at Capital One] have discovered hundreds of new businesses because of the data we collect on our customers. Technology is the central nervous system of our strategy," Donehey says.

Conference participants had plenty of opportunities to network with their counterparts from other companies. For Jack Dowling, CIO and vice president of Dallas-based Compucom Systems Inc., the time he spent in casual conversation with other CIOs was invaluable. For example, Dowling says he spoke with Sean O'Neil, vice president and chief information systems officer of ITT Sheraton Corp., and Alexander Pappas, CIO and vice president of information technology of VeriFone Inc., about how to imple-

ment a telecommuting program. "Sean and Alexander's companies are doing telecommuting in a bigger way than anybody else I've heard of," says Dowling. "From talking to them, I got a blueprint for how to do telecommuting in my own organization. Now we don't have to figure it out from scratch. The entire trip to the conference was worth it just to meet those two guys."

—Jennifer Bresnahan



Solutions Spotlight

PATROL® MANAGEMENT SUITE OF PRODUCTS

Reliance for Security and Flexibility

Philippines Social Security System relies on the strength of PATROL to manage its distributed computing system

When the Philippines Social Security System (SSS) decided it needed a strong tool to manage the distributed Oracle databases and Unix servers across its nine fully functional data centers, it chose the PATROL product from BMC Software.

"Our aim was to stop the IT department from getting trapped in a cycle of systems failures which commonly occurred due to database errors and crashes. In addition, our huge database of applications, systems resources and files needed automated enterprise-wide monitoring and coordination along with proactive systems management to analyze and control the performance of our distributed computing environment," says Tony Maralit, manager, database administration group, SSS.

The SSS evaluated various products and found, with the exception of PATROL, they did not support all multiple platforms in the organization. In particular, PATROL was the only evaluated product that could support SSS machines running on DEC Ultrix.

"With PATROL's multi-vendor support, its ability to improve management efficiency and speed up system maintenance, through the automation of many routine tasks, it was the natural choice," Maralit explains. The SSS also took into account the strong local support and the technical expertise that would be provided by BMC Software's distributor Leverage Systems Technologies; and that with PATROL's product-specific modules, time and effort required to train staff would be substantially reduced.

The 16 million members of the government-owned SSS access a range of financial services, such as housing, salary, and stock share loans, through 54 branches across the country. Of these, nine branches serve as fully-functional data centers.

The results with PATROL implemented were immediate. Reduced downtime led to improved customer service and heightened staff productivity. Costs relating to technical support were reduced too as the SSS no longer had to rush support personnel to various branches to correct system errors and restart crashed systems.

PATROL product-specific expertise for monitoring and automating processes, also leveraged the technical skills of the administrative staff and helped reduce training requirements, as well as administrative overheads. Reporting also became more efficient as PATROL kept automatic and regular track of network and database activity. PATROL easily addressed the issue of central monitoring of

remote Oracle databases as it automated and centralized the control of critical elements.

Currently, PATROL consoles are running on the organization's SCO Unix, DEC/OSF1 and IBM RS/6000 machines. Its agents are running on SCO Unix, DEC/OSF1, IBM RS/6000, Sun Server and DEC Ultrix machines. All databases and Unix machines in the remote offices are monitored centrally from the head office using PATROL. With proactive systems provided by the product, only two database administrators and two systems administrators are needed at the head office to monitor and control the databases and Unix machines in all nine offices.

The SSS is now planning to establish a

back-up and recovery center with an additional license of PATROL. "To be successful in a changing global marketplace, an organization must be flexible and able to address new business opportunities," explains Maralit. "Hence, each SSS data center has its own database to help it respond quickly to the local environment.

"PATROL is event driven and can manage virtually any application providing a pragmatic alternative to centralized corporate databases. As a result, we now have PATROL-based management control from the head office," says Maralit. "We would like to have the same flexibility and support for the back-up and recovery center, which is why we have requested another license."

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Jesse Lipcon, Vice President AlphaServer Business Segment, DIGITAL Equipment Corporation

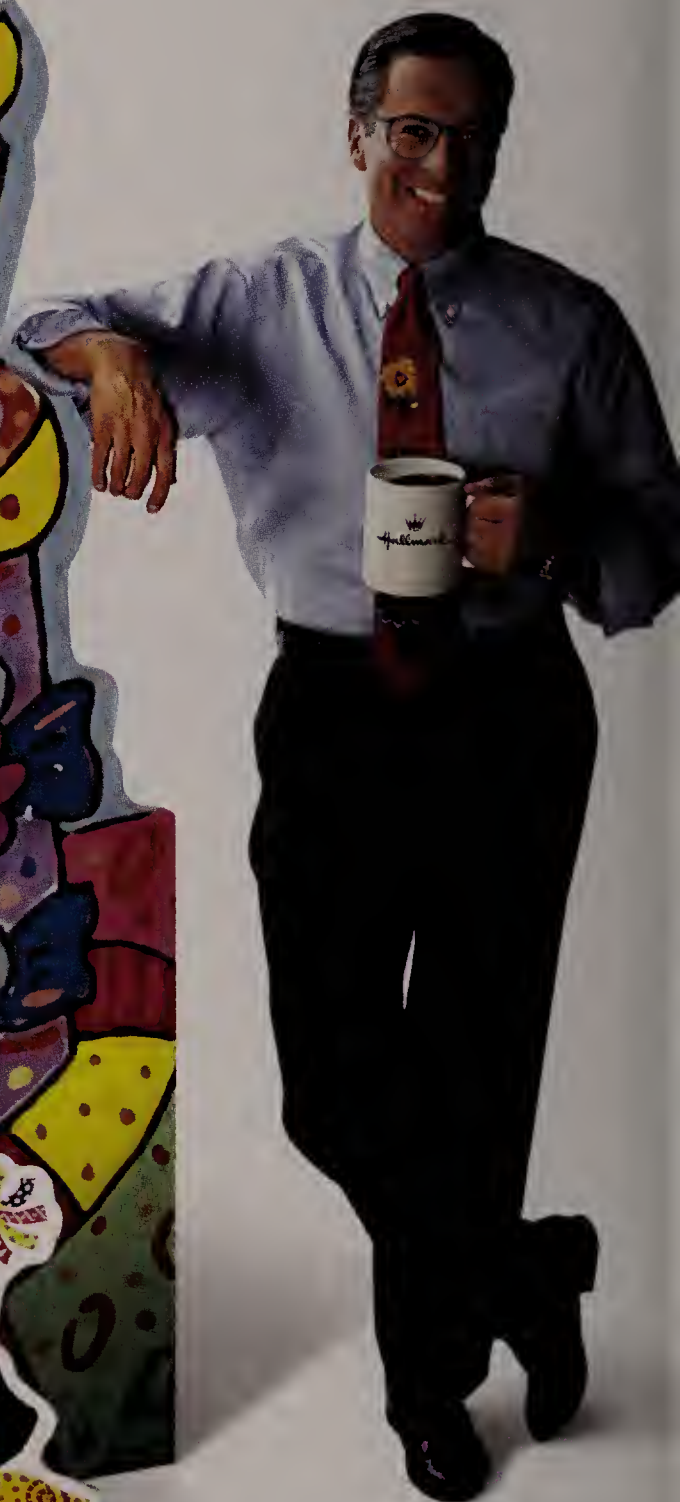
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Transactions in the Age of the Consumer

Reporter's Notebook

arrangements. And, of course, all contracts have rocky spots. You need to have a specialist who is continually paying attention to you as a priority.

CIO: What is the highest level of outsourcing you've seen? Would a company outsource CIO-level functions?

McFarlan: Outsourcing goes beyond IT. You can outsource accounting, personnel management, whatever. You can't, however, outsource someone to manage the outsourced relationships. We have seen as much as 97 or 98 percent of a company's resources being pushed

CIO: In your presentation, you said, "We are dealing with an end-user environment that is vastly different from the environment that existed just a few years ago. Implementation is where the action is. The great challenge we in this room face is moving from vision to practical reality." How can outsourcing help achieve that movement?

McFarlan: You need to decide which risks you are willing to expose yourself to. Where do you want to take your chances? On one hand, you hate

age. Outsourcing is itself a strategic initiative to apply the most appropriate resources to the job at hand.

CIO: Unemployment in this country—now at 5 percent—has reached its lowest level in more than 20 years. Do you see an end to our staffing crisis?

McFarlan: I wouldn't expect it to clear much before 2001. You've got the year 2000 problem, and that uses people and triggers the forced installation of enterprise software. That problem alone creates a critical demand in the face of an inadequate number of capable technical people. Now, with the economy as strong as it is, I think the year 2000 problem will prove much less of a catastrophe than it could be. We may lack the people we need to deal with it, but at least we have the cash.

If we were to experience an economic catastrophe—say, if the plunging stock markets in Southeast Asia were to ripple across the globe and cause some sort of panic—all bets would be off.

In a recession, when discretionary money drops off, so does investment in solutions for these kinds of problems. People take clumsier approaches to dealing with problems like Y2K. If unemployment rises to 8 percent, you'll find all kinds of projects pushed to the side. Look at Malaysia. In the past year, a big piece of its planned infrastructure expansion has been shut down. Suddenly, the expansion is far beyond Malaysia's ability to finance.

CIO: You said, "Strategic IT outsourcing goes on even as the role of the CIO becomes more important." Why did you feel that needed to be spelled out?

McFarlan: CIOs must position themselves to manage each outsourcing relationship and contract. In the end, the outsourcer is a profit-making organization driving its own agenda. And that agenda will not always be aligned with your agenda. **CIO**

Senior Writer David Pearson can be reached at dpearson@cio.com.

to outsource the really critical, core-differentiating activities. But if you simply can't get and retain people of the quality you need, you don't have a choice.

CIO: Would you be dedicating so much study and attention to outsourcing if there were not a staffing shortage?

McFarlan: Yes. The outsourcing initiative is not driven by the staffing short-

out. That raises a critical question: Exactly how much of a monitoring, supervisory role should be handled internally? As you work through the contract, and it unfolds over time, the fewer people you will need [in-house]. It's been suggested that you have one in-house person for every \$20 million worth of annual billings.



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CIO is pleased to present this special section on strategic planning for information systems.

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Ga

TruServ CIO Paul Lemerise has pieced together a plan to see him through a complex merger.



A man in a light-colored suit and dark tie is sitting at a table, looking thoughtfully at the camera. His hands are resting on a chessboard with several chess pieces visible in the foreground. The background is dark and out of focus.

me

BY MINDY BLODGETT

When the True Value Hardware Stores, a unit of Cotter & Co., and ServiStar Coast to Coast Corp., a distribution and servicing company, merged last year, they created a \$4.5 billion retail giant, which in turn created new and complex IT needs.

Paul Lemerise, executive vice president and CIO of TruServ Corp., the wholesale cooperative created by the merger, says he was faced with "several patchwork quilts that needed to become one." The companies officially merged July 1, 1997, but Lemerise will spend until January 1999 combining and reengineering their information systems, an initiative that will merge them in the truest sense of the word. To do that, Lemerise says, he will rely heavily on a new strategic plan aimed at integrating myriad information technology systems into a single system with standards and coherence.

Reader ROI

AFTER A HIATUS OF SEVERAL YEARS, STRATEGIC PLANNING IS high on the list of CIOs' concerns. Why now? There's a host of technological developments and a strong economy allowing companies to focus on growth. In this article, readers will learn

- Why strategic plans are important to IT and the business
- What makes a strategic plan successful
- How some CIOs develop strategic plans



Not too long ago, IT managers would hear the phrase "strategic planning" and groan. In the late 1980s and into the early '90s, IT staffs were too busy scrambling to keep track of the changing technology landscape, grappling with legacy systems, cutting costs and simply implementing change to spend time concocting formal plans.

But strategic planning is back in a big way, with an increased emphasis on aligning IT planning with a company's business focus rather than simply putting together blueprints for catching up with technology advances. A survey of 301 IT executives, conducted in October 1997 by CIO Communications Inc. and ICEX Inc., a Boston-based consulting and knowledge packaging firm, reveals that the IT strategy process, including aligning business and IT strategy, is the number-one concern for CIOs. More than two-thirds of the respondents said their organizations had developed a formal IT strategy; of those, two-thirds said the IT strategic plans were conceived in the last two years. (See "Plan Accordingly," Page 47.)

Why this renewed interest in formal strategic planning? As the demands of an increasingly competitive workplace call for closer integration of IT goals and the business mission, strategic plans for the whole enterprise become more important. "I remember a time when IS strategic plans came forward from an IS perspective, saying, 'This is what IS thinks,'" says John Braucksieker, corporate director of IS for the International Wire Group Inc. in St. Louis. "We in IS were on this side with our pocket organizers and the business people were on the other side, afraid to show us to customers, and there was not much dialogue between the two groups."

"Now, a good IS plan has to keep in mind the internal customers as well as the external customers and vendors, and IS has to work closely with the business side to make sure IS is helping the company stay competitive," he continues. "The two sides have to work together or a plan will fail."

CIOs in the early '90s were busy cutting costs and outsourcing, leaving no time for strategic planning, according to

Rick Swanborg, president of ICEX and a business partner of CIO Communications. "CIOs would go to the CEO with a plan, and the CEO would say, 'Great job, but we have no money,'" Swanborg says. "CIOs began to say, 'Why bother?'" But Swanborg adds that with the advent of client/server technologies, the year 2000 challenge and the possibilities of the Internet, "CEOs are saying, 'I could be convinced to spend some money. Let's do some planning.'"

What's in a Plan?

Simply put, a strategic information systems plan identifies a set of computer-based applications that will help the company reach its business goals. To create a plan that truly is strategic, the CIO and the CEO must work together. "Where many CIOs make a mistake is in seeing the strategic planning process as a formal, A-to-Z process rather than as a relationship and communications exercise," says Swanborg. "The smart ones try to figure out what kinds of decisions they want to make. A few well-placed meetings with some top executives, asking what kinds of issues are driving them crazy, will go a long way. A CIO might find that a CEO

doesn't think the Internet is important, for instance."

Swanborg advises CIOs to determine in advance how a strategy will fit with the company culture, which will help build credibility for the plan. "This is a long way from the old style, which was just to release a plan saying, 'We need more PCs,'" he says. One of the keys to ensuring that a strategy falls within a company's culture is to emphasize the data collecting and interviewing phase of a strategic plan, to make sure IS and the business are communicating effectively and openly, Swanborg says.

Russ Bartels, project executive at Hitachi Data Systems Corp. in New York City, has consulted with several companies on their strategic plans. He says a plan should improve the business or reduce IT costs, or both. "If we lack confidence that the proposed changes will provide significant benefits, then the plan probably lacks strategic changes," he says. Bartels adds that while the approach to strategic planning has become more sophisticated in terms of the technology and programs the planning teams tackle, the planning process itself has not necessarily improved.



**"A good IS plan
has to keep in mind
the internal
customers as well
as the vendors."**

**—John Braucksieker
IS Director
International Wire Group**

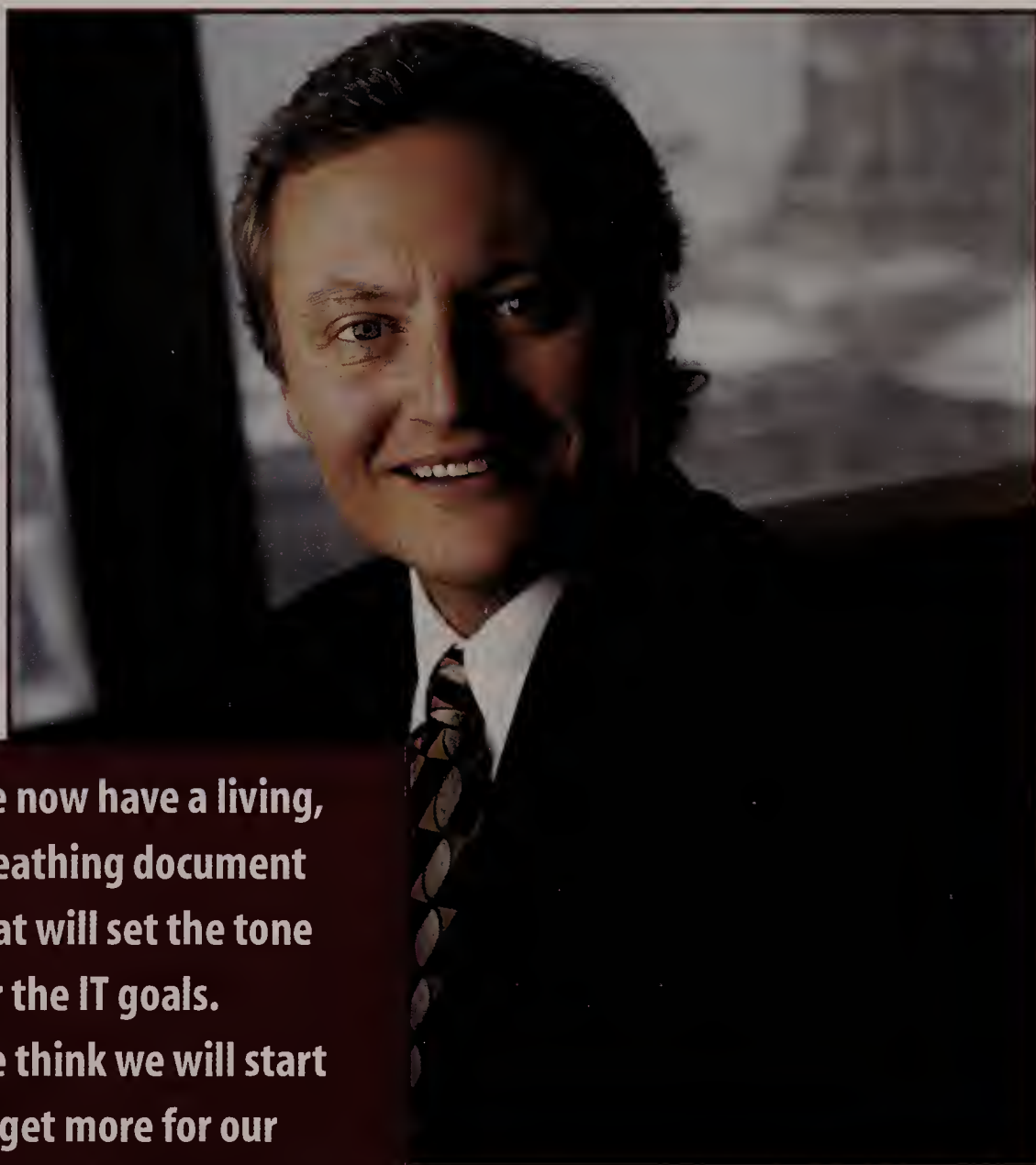
"Business people and CIOs have gotten better about working together," Bartels says, "but the steering committees and other planning processes are not there yet. Too often companies draw up a list of what they want from technology by looking backward rather than forward. They need to be thinking, 'What can we do to change our business for the future?'"

A successful plan needs to address several issues. First, it must closely align IS's goals with the business focus of a company. Rather than just provide a complex proposal for systems architecture, the plan needs to include information about the fundamentals of the business. Buy-in from senior executives is also a must, so the CEO and other executives should participate actively in the planning process. To get top support, CIOs must convince senior executives that a plan, with their input, will help the bottom line. A cost-benefit analysis should cover all relevant costs, and the plan should be somewhat open-ended with room for revisions and updates even after the plan has gone into effect. And finally, while involving the business side, the plan should be spearheaded by IS so that IS staff members don't become mere order takers for other business units.

Team Players

When TruServ's Lemerise embarked upon the strategic planning process, he turned first to New York City-based consultancy Ernst & Young LLP. Although a minority of the CIO/ICEX survey respondents reported using outside consultants to help develop IT strategy, Lemerise says that for him, handling the complexity of the company's IT needs following the merger required some external input. Ernst & Young was already working with the company on external audits, so expanding the partnership to include strategic planning was easy, Lemerise says.

A team of Ernst & Young consultants and executives from both True Value and ServiStar worked on the plan. Lemerise, who decided the makeup of the team, says he did not tap IT executives because he wanted strong input from the business side of the house and believed that he and



"We now have a living, breathing document that will set the tone for the IT goals. We think we will start to get more for our money with this plan."

—George Samoil
CIO for Alberta, Canada

the consultants could explain the technology issues adequately.

The team's first decision was to include in the formal strategic plan both a short-term tactical plan and a long-term strategic plan. The short-term plan is aimed at supporting the merger in the immediate sense—by establishing a help desk, for example—and ensuring that projects such as year 2000 compliance are on track. The long-term strategic plan examines such issues as the use of the Internet and corporate intranet in developing an initiative for electronic commerce, Lemerise says.

In creating the plan, the team relied heavily on executive interviews. Lemerise says he asked the business side for a merger plan and a business plan early in the process. Neither existed at that point. So to get the perspectives of corporate executives, Lemerise and the other team

members interviewed the 30-odd senior executives, seeking information on the new business goals of the combined companies as well as a technology wish list from the various departments. All the senior executives cooperated. "They knew how desperately we needed to do this," Lemerise says.

"I asked to meet with the CEO for an hour-and-a-half, and we ended up meeting for three hours," he adds. "Once I started asking questions, he just got so excited. It got him thinking not just about IT but about the business. At later companywide meetings, he would ask me to stand up and he would say, 'Here is the guy who asked me the questions we all need to ask.'"

Once the team had gathered the information from the interviewing process, Lemerise met again with the senior executives. He identified the technology needs and desires and pointed out areas in which some executives did not agree about how to proceed. "We got them all in a room and said, 'Here is where we don't agree,'



Make No Mistakes

Take note of these pitfalls to avoid during the IT strategic planning process

• **Don't view the process as a highly structured exercise with strict guidelines. Instead, focus on building relationships and improving communication between IT and the business side of the enterprise using such tactics as extensive interviews with users and stakeholders.**

• **Distinguish between tactical short-term goals and long-term strategy. Planners sometimes mistake short-term goals, such as buying more PCs, for long-term strategies that will truly align business with IT. A solid strategic plan can be expensive, involves much of the organization and is not always easy to retract.**

• **Don't rely too heavily on outside consultants to draw up the plan. Consultants are often not worth the added expense and there is often enough talent in your own organization to put together a plan. If you do use consultants, check out their business partnerships ahead of time—sometimes a consultant or systems integrator will have a vested interest in pushing a particular software or technology.**

• **Don't make the plan a closed document set in stone. It should be open to revisions and updates in case the business or technology changes.**
—M. Blodgett

and we wouldn't let them leave until we had complete agreement [on the overall strategic plan]," Lemerise says.

The formal IT strategic plan, in place since July 1997, lays out initiatives for three years, including moving to one common retail system, delineating clearly how the company will use both the Internet and a company intranet and new radio-frequency technologies in the company's warehouses.

But the plan will remain fluid, Lemerise says. "We're going to be constantly reevaluating and updating the plan with new business goals." After drawing up strategic plans from scratch for five dif-

ferent companies during his 20 years as an information executive, Lemerise says, he has learned not to be too ambitious or aggressive. "Anything beyond planning for three years often doesn't ever happen," he says. Instead, a plan should not be a document "that is signed off and rolled out one time and then put on a shelf. It should be reviewed every six months as new business requirements are identified.

"Focus on being realistic and not just on completing the plan," he adds. "Every plan should have an ROI, one not always measured in terms of dollars and cents but in performance matrix, such as improving communication with the customer."

deputy ministers).

Samoil points out that government IT departments face some special challenges. "You answer to elected officials and to the voters," Samoil says. "Everything you do is closely scrutinized [by the public]."

Samoil does not have the centralized power that a private CIO often enjoys. Although his office was created to get a tighter rein on IT spending and initiatives, the 17 government ministries retain their own IT staffs and directors and will remain autonomous under the new strategic plan. "We had 17 different departments going off in 17 different directions," he says.

But Samoil says the formation of the CIO Council has gone a long way in overcoming that problem by ensuring that each department has a voice in the plan. Working subgroups of IT staffers from different agencies have examined specific technology questions, releasing reports on such issues as how to improve the network infrastructure. And finally, all the departments were reassured that Samoil's newly formed office would not take over all spending and technology decisions. "We are leaving the bottom-line budgets up to the departments," Samoil says. "If you want buy-in and support, you can't be too controlling." With the completion of the plan in July 1997, Samoil says, the departments were able to reach agreement on definite IT goals with specific deadlines. For instance, the plan called for a new information network linking government offices to be implemented by September 1997—a deadline that Samoil's office



Paul Williams, CIO of CalFarm Insurance, argues that strategic plans make companies less responsive to change.

Guided by Voices

In Alberta, Canada, the government created the Office of the Chief Information Officer in 1995 to institute better management of the disparate needs of government agencies. Two years ago, George Samoil, named the government's first CIO in 1995, spearheaded an ambitious, three-year information resource strategic plan process devised by his office, IT staff from every government ministry and a newly formed CIO Council, made up of the assistant department heads (known in Canada as

met, he says. The plan also calls for implementing more efficient data sharing among the ministries this year, while at the same time imposing strict guidelines for protecting privacy. And the plan seeks to ensure that all the ministries will have finished their year 2000 testing by the end of 1998, with testing measures in place. To cope with the decentralization and the wide variety of IT standards among the different departments, Samoil says the government is building one testing center for departments doing their own year 2000 software conversions and is enforcing a single year 2000 certification standard.

The strategic plan also calls for the development of a governmentwide system for reporting on network and

upgrade needs, as determined by examining the utilization rates and networking capacity of each department. And for departments that outsource IT needs, the strategic plan sets specific criteria to ensure some standardization between departments.

Even now, challenges remain. For instance, Alberta's government agencies currently use 21 different e-mail systems, Samoil points out. "Our goal in the coming months is to come up with a compatible standard," he says.

But the bottom line of the plan is to try to get the 17 ministries the best services for the money spent. "Our IT budget for 1997 was \$160 million [U.S. \$112.4]," Samoil says. "We now have a living, breathing document that will set

the tone [for the IT goals] and that we can revise and work with in the coming months. We think we will start to get more for our money with this plan."

Value Judgments

But some CIOs are still skeptical that the energy, time and money necessary for strategic planning can yield tangible results. Paul Williams, vice president and CIO of CalFarm Insurance Co. in Sacramento, Calif., says that while he supports advance planning, he discounts the value of the kind of structured process leading to a formal strategic plan.

"I have been in IS for 32 years, and I come from an era of grandiose plans that never worked, where the planning process becomes an end in itself," Williams says. "I have never seen it work very well. We focus on the business needs, but we have never been a company with much bureaucracy. We don't do a lot of committees and we don't write a lot of memos," he says.

"I almost think that the best strategic plan is to have no plan," he adds. "Then you can be nimble and respond quickly to changing business conditions."

Williams agrees that even without a strategic plan in place, communication between the IT and business sides of the company is vital. "Right now we are completing a data warehousing project that will allow senior management to have the information they need immediately to respond to business needs," Williams says. "We decided on that course after communicating with senior management. We've worked out a plan for year 2000 compliance. So far, it is all working quite well without a formal strategic planning process."

But CIOs like Lemerise and Samoil argue that the changing times and new IT challenges call for a more structured IT strategy. And companies that don't take those strategies seriously might find themselves unable to meet the needs of the business. As Lemerise says, "If you have a company without business alignment, then you probably have a company without a strategic plan."

Samoil agrees: "Without a strategic plan, you are just wandering in the wilderness." **CIO**

Senior Writer Mindy Blodgett can be reached at mblodgett@cio.com.

Increasingly

A new CIO/ICEX survey shows how and why strategic plans have become vital to IT and the enterprise

THE I.T. STRATEGY PLANNING PROCESS HAS BECOME CRITICAL IN RECENT YEARS, according to an October 1997 survey from CIO Communications Inc. and ICEX Inc., a Boston-based consulting and knowledge packaging firm. Seventy percent of the 301 executives responding to the survey reported that their companies have developed an IT strategy, with two-thirds reporting that their plans were completed within the past two years or were still under development.

The survey also revealed the following trends in strategic planning:

The top reasons for creating a formal IT strategy were the need for an understanding of the overall business strategy and for a formal assessment of the technologies used.

The majority of respondents, 57 percent, said the planning process was basically completed within six months.

The respondents spent an average of \$163,000 on strategy-related expenses.

Thirty percent of respondents are not conducting a formal IT strategy planning process, and 38 percent of those respondents reported a lack of resources as the reason. Almost one-quarter of the group cited lack of support from top executives as another reason.

All but 2 percent of the survey respondents who begin the planning process with off-site meetings of IS and non-IS management said that it was a highly effective practice—but less than half of the respondents use off-sites.

The most significant strategic shift was from proprietary systems to intranet applications, with 37 percent of the respondents reporting they are shifting in this direction and 40 percent already implementing intranet applications.

Highly effective practices for strategic planning included senior executive interviews (57 percent), customer focus group meetings (52 percent) and off-site meetings with IS personnel (50 percent).

—M. Blodgett



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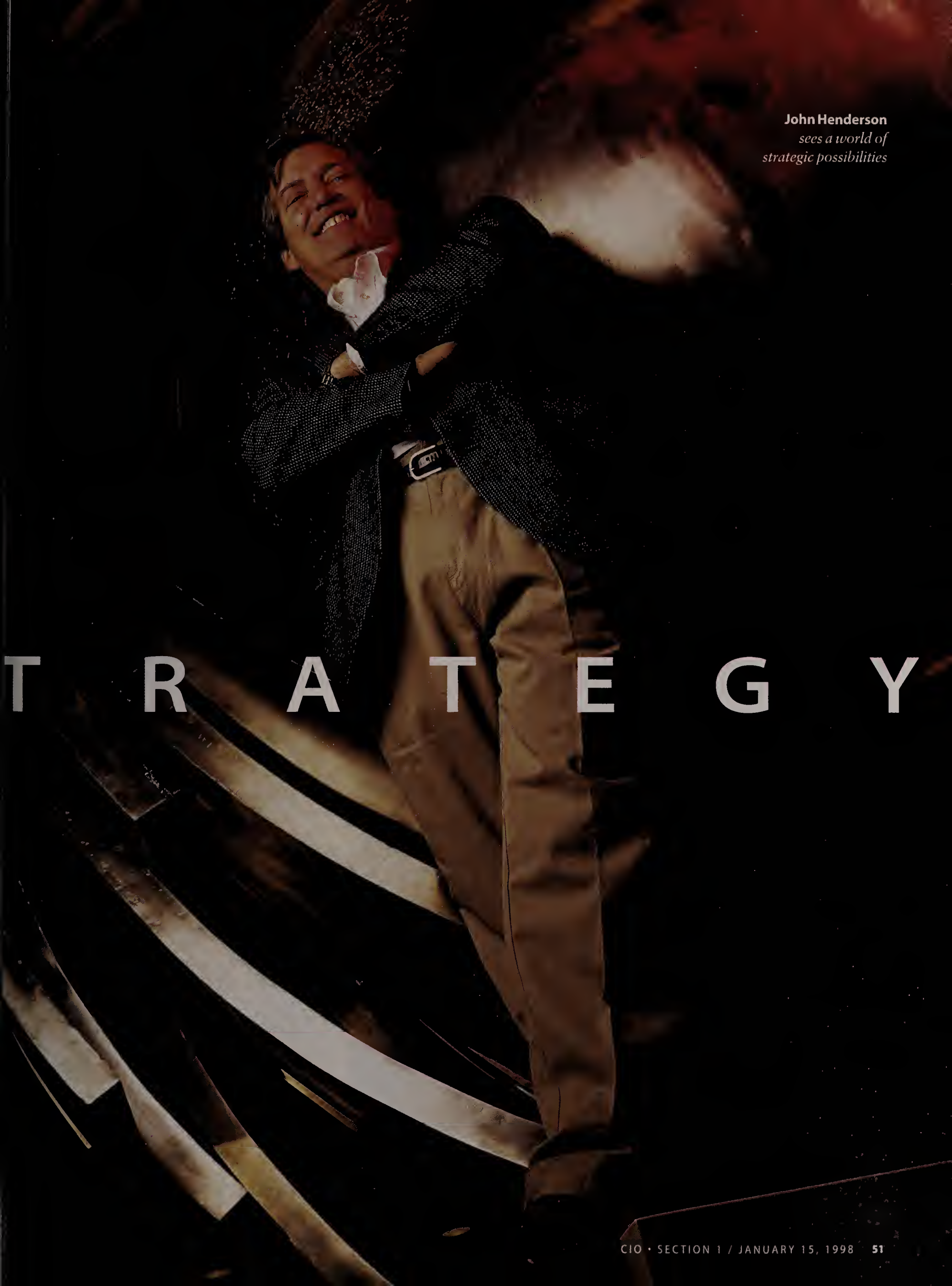


John Henderson, chairman of the Department of Information Systems at Boston University's School of Management, gives tips for CIOs who need to start thinking strategically

Step into Boston University's

brand-new, superslick \$100 million-plus School of Management building and you know that somebody made some right decisions. John C. Henderson, director of the school's Systems Research Center, thinks a lot about decisions and how they are made—especially decisions about information technology.

In 1975, as a PhD candidate at the University of Texas, Austin, Henderson made his earliest mark by completing his dissertation on decision-support systems. At MIT's Sloan School of Management in the late 1980s, he teamed up with N. Venkatraman to develop a strategic alignment model for enterprisewide IT. Since then, Henderson has come to regard knowledge management systems and leadership initiatives as key strategic tools that can help bring that model to fruition. To ask some strategic questions about strategy, Contributing Writer Tracy Mayor met Henderson in his fifth-floor office overlooking the Charles River.



John Henderson
*sees a world of
strategic possibilities*

T R A T E G Y



INTERVIEW: JOHN HENDERSON

CIO: For a time, strategic planning was hot. Then people seemed to back away, and now there's renewed interest. What's going on?

Henderson: When information technology people came into planning, they came into it with a history of design, with a culture and a history of provably correct and zero defects managerial models. But in the role of businesses, those models are unrealistic. There's too much uncertainty.

Strategic planning from the business side evolved into more of a strategic thinking process of trying to estab-

lish principles, visions, directions and major initiatives. Nevertheless, IT people continued planning to develop architectures and well-defined three-to five-year plans. But in the last couple of years, we've seen IT people change. Today you see many more IT plans drawn as road maps, just as on the business side you see IT plans connected to vision, principles and initiatives.

CIO: Is the idea that if you can articulate your principles and your vision, then you can change products without having to completely revamp every time?

Henderson: Right. What CIOs have to do is build a strategic plan that puts in place a framework and a direction for IT. That way, the products we produce aggregate. They add to the value of the firm, and they enable us to learn and create new competencies and understandings.

CIO: How does a technology strategy align with the business strategy?

Henderson: A business strategy has both an external view that determines the firm's position in the market and an internal view that determines how processes, people and structures will deliver on that position. In the work I did with my colleague, N. Venkatraman, our fundamental position stated that a technology strategy should also have those same external and internal components. Historically, the IT strategic plan has focused only on the internal IT infrastructure—the processes, the applications, the hardware, the people and the internal capabilities.

CIO: Most IT people see those internal concerns as part of their job descriptions. But the external considerations are new.

Henderson: We now begin to see that part of IT strategy must be external positioning. For example, if your IT strategy as a retailer is to move aggressively in the area of Web-based channels of marketing, [you need to decide if] you want to form a strategic alliance with a technology firm to help do this or if you want to keep all those competencies internal. If you are going to do a strategic alliance, you need to decide with whom you will do it. Will it be small companies, startup companies with which you may have leverage? Or will it be Microsoft?

That choice doesn't change the business strategy, but it can have a huge impact on how that business strategy unfolds over time.

CIO: This external element adds a new layer of responsibility for IS. You have to know your technology but also the companies and the market structure.

Henderson: And how that market can affect your business. It means you have

Swimming in the Think Tank

Wade into the Boston University's Systems Research Center to experience shared strategic knowledge

THE SYSTEMS RESEARCH CENTER AT THE BOSTON UNIVERSITY SCHOOL OF Management was established in 1991. To read about current research, set your browser to management.bu.edu/research/src/. The Web site's purpose is to "provide a forum for conducting applied research on the organizational challenges surrounding the effective management of information and technology."

John C. Henderson's passion for understanding knowledge management is evident in the site's introduction. In part, it reads, "Knowledge assets represent an extension of the traditional view of data and information management to one that explicitly recognizes the need to leverage local expertise, share contextual knowledge and, above all, provide a platform for effective organizational learning.... Some corporations are beginning to develop systematic ways of creating knowledge based on their experience, identifying the critical lessons and deploying expertise quickly. When the knowledge asset is managed correctly, product development, customer responsiveness and cost all improve."

Hyperlinks at the Current Projects site include

Leveraging Expertise through Effective Knowledge Management

Leveraging Knowledge in a Global Organization: The Use of Virtual Teams to Access Expertise

Getting Fast: Effective Transfer of Knowledge as a Basis for Agility and Flexibility

Sustaining a Learning Organization: Linking Knowledge Management to Executive and Professional Development

Teaching Tips: A Knowledge Management Strategy to Achieve Excellence in the Classroom

There are several others. Dip your toe in Boston University's Systems Research Center knowledge base. Once your feet are wet, you'll leave wiser.

—Perry Glasser

to understand who the players are and how the dynamics of the market could create both opportunity and risk for your firm. And you have to find a way to engage the line executives in understanding those issues. Therefore, IT strategy is not about data definitions; it's about thinking through what's happening in the IT marketplace and understanding how that creates both opportunities and threats.

CIO: If a CIO needs to think externally, manage the internal concerns and address interpersonal communication concerns, can the strategic planning of IT become most, or all, of the job?

Henderson: Strategic leadership has a strong contingency base. If your basic systems are broken, you've got an operational problem and you had better go fix it first. I remember when [Louis] Gerstner took over [as chairman and CEO] at IBM; he was quoted very early on as saying, "The last thing IBM needs is a vision." Everybody went nuts. My response was, "This guy's got a lot of insight," because IBM needed to deal with reality.

Once you've got credibility and people who can make the place run, only then do you have the opportunity to be a strategic leader. At that point, the CIO's role becomes strategic.

CIO: What are some of the dangers of strategic planning for IT? What should CIOs keep in mind as they plan?

Henderson: The notion of keeping a balance between vision and operations is a classic one. The other classic is making sure you're always connecting to the business, that you're not becoming so focused on the dynamics of the technology market that you forget that that's not how you're making money. Third, remember that at the end of the day, strategy is a people-intensive process. It's about ideas and facts and markets and competition, but it's also about people. Strategic thinking can be thought of as leadership development rather than a problem that one has to find an answer to.

CIO: Any quick advice you can offer CIOs about strategic thinking?

Henderson: Yes. We desperately need to think about IT strategy as knowledge creation and knowledge management processes rather than as singular events that occur at specified times on annual calendars. I see some very

"The current state of strategic planning practice—where knowledge is stored either in document form or in the heads of individuals—is a bloody disaster."

exciting work going on around the notion that the strategic planning process is actually creating a community of people who are sharing knowledge—books they've read, events they've held, stuff going on in the marketplace, actual plans, projects, schedules and so on.

CIO: How do the experiences of different people turn into a strategic plan?

Henderson: Think about it this way: Here at the university, we constantly develop our strategy for what courses we teach, what research we do, what knowledge we want to have. But when I get ready to teach a class, I need to know what case I am to teach, who has taught the case before, what presentation he or she made, if we have any videos, if there are any teaching tips and what questions the students have asked before. None of that used to be available to me unless I happened to be in the room with somebody who taught the class before.

But we've put in place at BU a knowledge management system that allows a professor to get access to that knowledge through the Web and with videos, audio, documents and lessons learned.

CIO: Can't that kind of knowledge base become just a big laundry basket of information?

Henderson: Well, that happens when there's nobody thinking about planning as a process. First you need to think about strategic planning as a thinking process, then you've got to put in place the systems to support that process.

The current state of strategic plan-

ning practice—where knowledge is stored either in document form or in the heads of individuals—is a bloody disaster. You're not learning from what you did the last time. So every strategic plan is like a new beginning.

Until we change our ability to manage knowledge effectively, we are not going to have a substantial impact on a firm's ability to think strategically. What's the life of a strategic plan before significant change happens? What's the shelf life—18 months? If it takes me two years to communicate the plan to my organization and the shelf life of the plan is 18 months, I'm in deep trouble.

CIO: So should a CIO go out and buy some brand-new fill-in-the-blank software system? Can anything be done right now?

Henderson: Certainly. Increasingly, you need hyperlinked technologies because no one document is useful by itself. It's the web of content that I can explore that makes the knowledge system useful. A strategic plan is the outcome of a very long series of discussions and analyses, and we need the ability to trace the line of reasoning, to get down to primary evidence, to find out quickly and easily who had this idea. Those kinds of links weren't in the document in the past because the document wasn't seen as part of a knowledge network. It was seen as an end product.

CIO: So when you talk about the need for a dynamic strategic plan, you're talking about it being physically and technically dynamic as well as philosophically dynamic?

Henderson: That's exactly right. **CIO**

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Clear

STEERING

BY DAVID PEARSON

When they're
running on course,
steering committees
let CIOs share the
responsibilities—and
the risks—of aligning
IT with the business

If you're a CIO, you're a lightning rod. Stand head and shoulders above your peers on strategic IT decision making, and you're an easy target for every dark cloud that comes along.

And hasn't the success of IT in general ushered in a slew of storm fronts? Information technology has gone far past the point of simply helping implement corporate directives handed down from on high. It plays a key role in formulating corporate visions and missions. There's not a CIO in the world who would be safe providing that kind of input from an isolated roost.

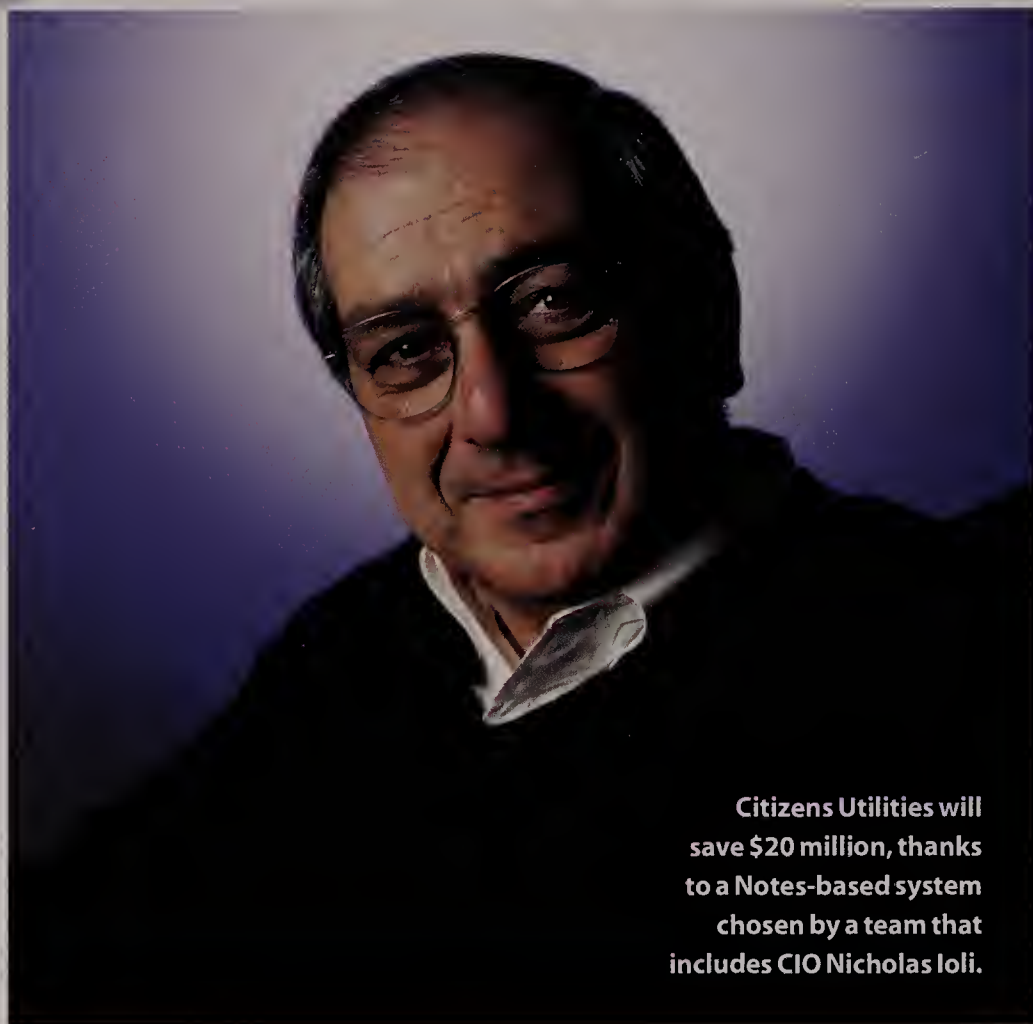
Maybe that's why the IT steering committee seems to be enjoying something of a renaissance.

While there's been no head count to document changes in the number of IT steering committees through the years, Michael Earl, a CIO editorial advisor and a London Business School professor who wrote about the subject in *Management Strategies for Information Technology* (Prentice Hall, 1989), says his more recent research indicates a resurrection scenario. And in an October 1997

Reader ROI

MANY OF THE ENTERPRISES THAT support their IT operations with some form of steering committee wouldn't make a move without it. In this article, readers will hear from three CIOs who explain

- ▶ How to get diverse and competing interests to unite around IT steering
- ▶ The advantages of doing so
- ▶ The payoffs of sharing control



Citizens Utilities will save \$20 million, thanks to a Notes-based system chosen by a team that includes CIO Nicholas Ioli.

survey of 301 CIOs conducted by CIO and ICEX Inc., 64 percent reported using high-level committees to review IT strategy (for more survey results, see "Game Plans," Page 42).

Naturally, not everyone is a believer. Of 10 CIOs informally polled for this article, four report that they're operating, and succeeding, without benefit of a steering committee of any kind. Still, enough of the others swear by some kind of group guidance to make it clear that something's going on. Some have rechartered the assemblage and conferred upon it binding executive authority or broken it into two or more subcommittees to handle specific issues and activities. A couple have invited the participation of end users, consultants and professors.

But all share the same basic goal: to get a group of leaders from disparate regions of the enterprise—each with interests to protect and agendas to advance—to share the responsibilities and risks that come with aligning IT initiatives with broader business aims.

How can a committee pull that off? How important is it to do so? And are the risks involved in ceding some control to the technically uninitiated worth the rewards? We ran those questions past three CIOs who profess heavy reliance on at least one dynamic, active and involved steering committee.

Cross-Functional Cooperation

At Citizens Utilities Co., headquartered in Stamford, Conn., CIO Nicholas Ioli has found that adjusting to life in a number of recently deregulated—and thus newly competitive—public-utility markets has meant overseeing massive infusions of capital into IT endeavors, tactical and strategic alike. The company provides natural gas, electricity, water and wastewater treatment to 1.7 million customers; it's also heavily involved in telecommunications, Internet access and other products and services.

The company's IT steering committee, known as the Operating Technology Team, is one of many subgroups of a top-level board called the Operating Team. The board is headed by the president of the company, and all subcommittees report to it. The IT group includes Ioli plus the general managers of communications and public service and the vice presidents of finance, human resources and regulatory affairs. Members take turns leading the group for one year at a time, and the chair sets meeting agendas. (Currently, it is Ioli's turn.)

In 1996, the then two-year-old technology team grappled with ways to help its attorneys and regulatory specialists improve their effectiveness and efficiency. With deregulation reshaping the utilities industry state by state, the ability to capture and disseminate intelligence across state lines can offer an important competitive edge. State public utilities commissions, for example, won't approve rate increases from a provider that hasn't attended to every detail in justifying the request, explains Ioli.

To address those issues, the technology team united around a recommendation for an enterprisewide Notes-based system. The members' consensus brought quick approval from the president's Operating Team. Ioli estimates the initiative will

The Seven Habits of Highly Effective IT Steering Committees

Secure executive-level support.

Maintain high-level, broad-based membership positioned as a unifying group with an enterprisewide focus.

Have a clear purpose and focus and measurable objectives.

Constantly reiterate the committee's vision on how technology can fulfill its potential.

Have a CIO who knows how to win friends and influence people.

Involve enterprise leaders with organizationwide stature and perspective (preferably *not* the CIO because the temptation to dictate initiatives to technophobes so often proves irresistible).

Instigate and enable long-range planning efforts.

SOURCE: LINDA H. FLEIT, PRESIDENT, EDUTECH INTERNATIONAL, BLOOMFIELD, CONN.

save Citizens Utilities close to \$20 million over five years. He also says a final decision on the system's procurement may well have languished for months without the weight of the technology steering committee behind it.

"Had I tried to go and sell this on my own to all these operating units, there would have been a lot of reluctance," he says. "But when we're sitting in a group talking about it with all the operating leaders in front of us, and they understand the benefit to the business, they just say, 'Go ahead and proceed.' They tell their people, 'Here's what's going to happen,' and we move forward. That saves me a phenomenal amount of time that would otherwise have to be spent in relationship management."

One of the challenges Ioli faces is that he sits on other Operating Team subcommittees that compete with the IT steering committee for corporate dollars. In addition to funding IT projects, Citizens has to decide how many new gas lines it can afford to lay down, for example, or how many phone lines it can put up. Because he plays sometimes conflicting roles and must consider competing demands, Ioli is considered the corporation's chief change manager rather than its top technologist. Nevertheless, the technology steering committee affords him the opportunity to champion IT's capabilities and limitations across Citizens.

Ioli has picked up a few business insights in the process of working with the team. "I've learned a lot about the hurdles

and realized that in addition to the three people he already reported to, he had just become an answer man to six independent, ambitious executives representing wide and varying interests—including those of close to 4,000 technical professionals.

Walker fretted over the potential barrage of conflicting advice, complaints, demands and opinions he might have to manage, given the company's technically proficient workforce. And he quickly identified one particular concern: the prospect of playing judge and jury on requests for resource allocations. "[The vice presidents] were going to try to foist all the decision making on strategic investments on me," he recalls. "I knew that wouldn't work."

Walker made a formal pitch for an investment review board to the president of the company, Stephen Felice, emphasizing the need to separate strategic dollars from tactical ones and to prioritize initiatives. Walker pointed out that the existing decision-support mechanism, essentially an informal canvassing of business leaders at staff meetings, was useful but didn't provide a structured forum for discussing matters such as strategic investments. "We needed a way to capture and organize [the vice presidents' collective] ideas," he said. Felice responded by underscoring Walker's case with an even more forceful assessment. "IT is not data processing," Walker remembers Felice telling him. "It's a way to orient people around business processes." With that, DecisionOne's enterprise portfolio management team, a steering committee mandated to focus on strategic IT resource allocation, was born.

Walker chairs the group, which is scheduled to meet eight times a year and which makes recommendations to Felice and the CFO. Enthusiasm among participants—the company treasurer, the vice presidents of the strategic business units plus those from sales and marketing, field operations and logis-

**"We can make investment decisions
in the context of the whole corporation
rather than piece by piece."**

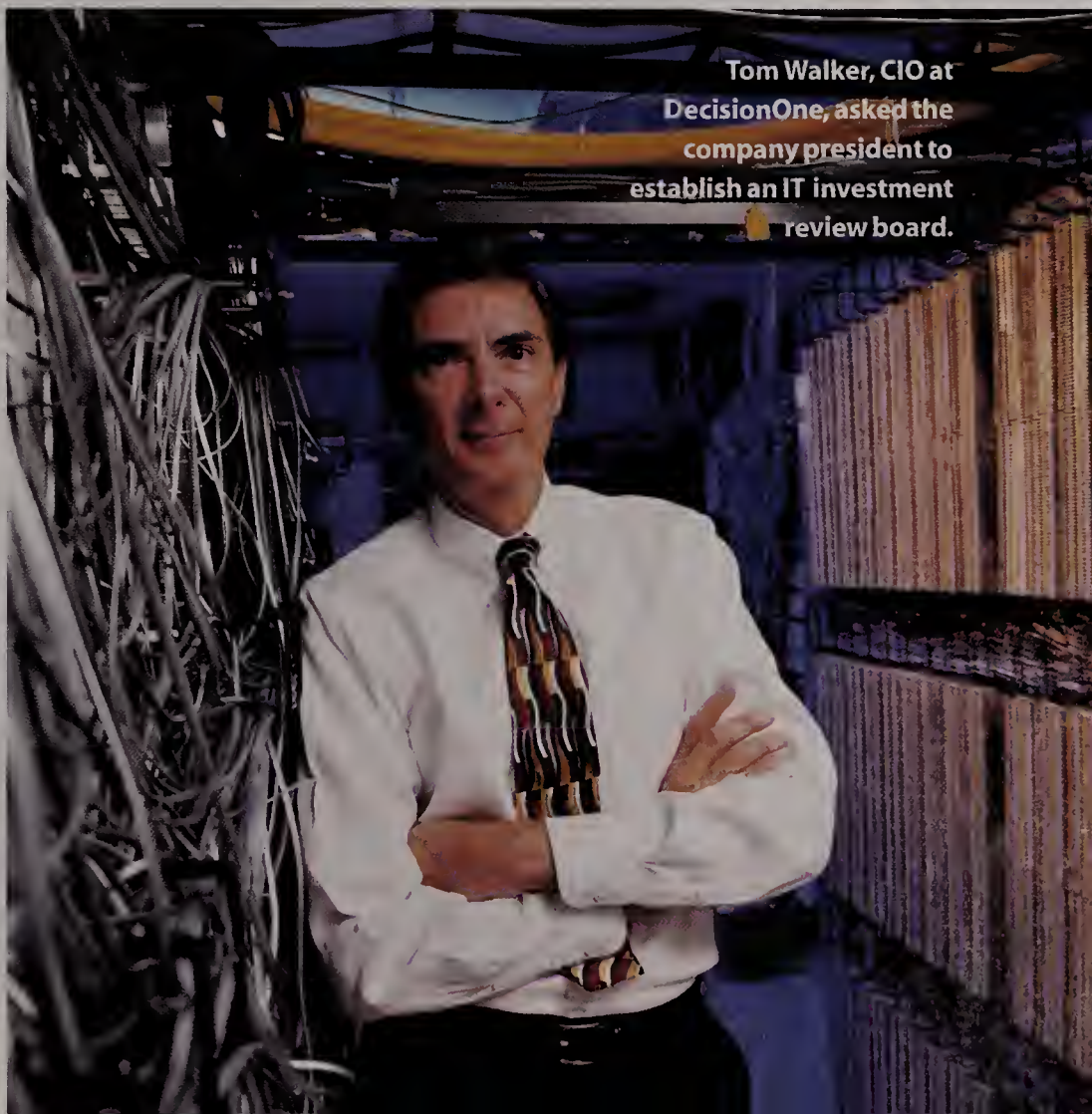
—Tom Walker

and problems our business managers face, and how to deal with politics and personalities," he says.

What advice would Ioli give a steering committee-less CIO? Create one. "This is a very positive way of aligning IT with the business objectives," he says. "You're partnering shoulder to shoulder with the business managers for the good of the company. This has been the single most important way that we've been able to get the business focused, understand the enterprise investment versus the local investment, and share economies of scale across the enterprise. The chairman, president and board all rely on this team to protect their investment, ensure that it's strategic and that they're getting good value from it."

De Facto Directors

Soon after Tom Walker signed on as CIO at DecisionOne Corp., a Frazer, Pa.-based, \$700 million independent provider of multivendor computer maintenance and technology support services, the company reorganized. After establishing six strategic business units, one for each of its core product lines, DecisionOne appointed the same number of vice presidents and authorized them to run their respective divisions as businesses within the business. The new CIO looked around



**Tom Walker, CIO at
DecisionOne, asked the
company president to
establish an IT investment
review board.**



tics—was initially “restrained,” recalls Walker. That changed when he emphasized that the committee was a de facto board of directors—a sort of strategic, corporate planning arm. “That seemed to resonate,” he says. “That [sense of ownership] was clearly something that had not been there before.”

Within six months of its debut, the steering committee was making conspicuous contributions. Walker cites an example: The finance department wanted a data warehouse that could be used to perform profitability analyses. The committee members hashed it out in spirited discussions, weighing the proposal against the company’s other resource-allocation options. They decided a data warehouse was indeed a worthy project but one needed less urgently by finance than by the service business unit—the primary driver of cost and revenue in DecisionOne’s business—even though the latter group had not specifically asked for the technology. “Had that requisition come through prior to our convening this board, the company probably would have gone ahead with the wrong initiative,” says Walker. “Or, at least, not the best initiative.”

Other payoffs on DecisionOne’s investment of time and resources into its IT steering committee are less quantifiable but equally valuable. “There’s a very high rate of return for me,” says Walker. “For one thing, I always know very clearly which initiatives are important and which aren’t. Before, it seemed someone was always changing an opinion, second-guessing or refining. That creates ambiguity. When your direction is clear, it’s very easy to marshal the forces and deliver.”

“This committee has been essential in developing consensus and support to get funding for multimillion-dollar projects.”

—David Caldwell

He also credits the steering committee with providing the entire enterprise with a common language. “Everywhere I go in the corporation these days, when people start talking about strategic IT investments, they’re using the nomenclature of the committee,” he says. “As a result, we’re better able to make investment decisions in the context of the whole corporation rather than piece by piece, where the pieces often have conflicting visions or goals.”

Walker lists five tangible ingredients as the critical elements behind the success of DecisionOne’s IT steering committee: mandatory attendance (no proxies allowed), senior executive sponsorship and support, a decision support tool for prioritizing initiatives, a documentation process that is thorough but brief and dedicated communications processes.

Then he leans forward and begins describing the features that he believes *really* make things click: a culture that encourages frank and candid discussion. A certain level of maturity among members. An understanding of the industry in which the company competes. An evangelist’s approach to motivation and team-building. “The CIO needs to give a lot of care and feeding to the IT steering committee,” says Walker. For example, some members may not appreciate the drain on their time or may doubt the return on their investment in the com-



At Wheaton College, David Caldwell advises a group of faculty, staff and students about IT investments.

mittee. Or maybe they understand the power of the group and stew over its potential to preside over their own discrete projects. The response may be vocal opposition, says Walker, adding that he’s no stranger to such hostility. “Sometimes you need to do some pampering,” he says. “Whatever the situation, it’s critical to work with your members on an individual basis and to make sure they remain full partners in the process.”

Politics As Usual

There’s very little action in the meetings of the Committee on Computing and Telecommunications at Wheaton College in Norton, Mass. Usually, no key decisions are made. No votes are taken. No dollars are allocated. But that doesn’t mean nothing is accomplished.

“It’s vital in an academic environment, where you’ve got groups with so many different kinds of interests—faculty, administrators, students—to allow representatives from each area to hear about what’s going on,” explains David Caldwell, the director of information technologies and services. “This committee is indispensable in a political sense.”

Colleges tend to be committee-happy, and Wheaton is no exception. “We’re not organized as a hierarchy like [many businesses] are,” says Caldwell. “A lot of things are done through influence and consensus.”

The committee acts as an advisory body, recommending initiatives to the college’s president, who must approve the annual IT budget, and the President’s Council, which advises the president on the use of IT. Formed seven years ago, its first goal was a five- to eight-year IT plan that included such initiatives as net-



working the campus, replacing administrative systems, putting the library on the Internet and equipping every faculty and staff member with a workstation. Having largely accomplished those goals, the committee has since turned its attention to rethinking its overall direction and lining up a new set of goals. That will take time, says Caldwell, but the preparation is already paying dividends. "Conversations about what technology is for and what we want it to do for the institution have been going on in lots of places," he adds. "It's spread out from this group. As a result, everyone is reading from the same sheet as we go forward."

The committee is cochaired by the vice president for finance and operations and the associate provost, who is an academic officer. The group's members include 11 faculty, staff and student representatives from around the campus plus Caldwell, who, although he's the college's IT expert, sees his function in the committee as one of support. "They're the ones who need to decide what it is they want to have happen here," he says. "We all try to make sure they state their decisions in general enough terms so that I have some choice in how we implement them."

Caldwell does most of his committee-related work between meetings with members in one-on-one discussions. Meetings are fine for communicating in broad terms, he says, but leave little time to address individuals' specific concerns and questions about technology. Because he works for an academic institution, he says, he is often looked to as a technical educator. As such, he chooses reading materials to prepare members for upcoming meetings and presents technical background information at meetings.

Asked if he'd prefer a position of greater strategic influence within the committee, Caldwell doesn't equivocate. "This committee is very powerful, because each of the two chairs has the president's ear in a big way," he says. By shaping committee members' thinking in meetings and his day-to-day work, he says, he has considerable influence over where proposals go. "I'm not in a position to command things to happen, but I'm definitely not ceding any control," he says.

"The bottom line is that this committee has been essential in developing consensus and support to get the funding [from the college] for multimillion-dollar projects that benefit all its constituencies," continues Caldwell. "I don't believe that would be possible if it were just me standing there saying, 'Hey, let's do this. It's a good idea.'" **CIO**

Senior Writer David Pearson can be reached at dpearson@cio.com.

To get the most value from your steering committee, determine which format works best for your company

After steering committees are established, sometimes with great fanfare, they often fizzle. Members miss meetings. Leaders show up without clear agendas. From there, complete abandonment can't be far behind. The problem? Confusion. Time-strapped executives simply have less patience than ever for activities with murky objectives. Michael Earl, professor of information management at the London Business School and an editorial advisor to *CIO*, has been studying IT steering committees for a decade and has concluded that there are four breeds. When you decide which one is right for your company's goals, you'll have a better idea who should participate in the committee, how often to meet and what the committee should do.

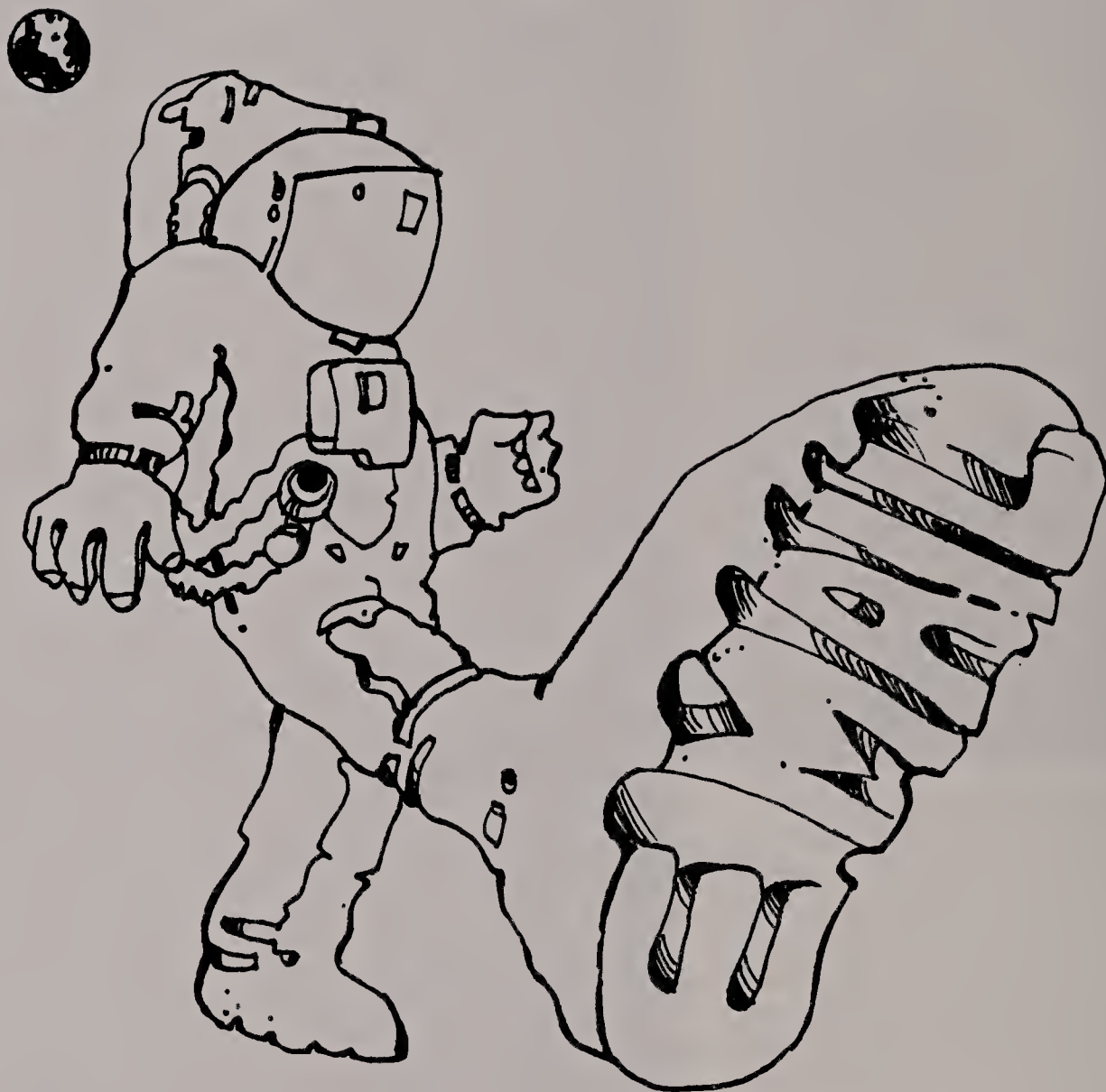
1. The Project Committee figures out which initiatives to pursue, setting priorities and allocating resources to the most important projects. "Many of these have died out over the past 10 years," says Earl. "Their job has been taken over by management teams in divisions or by executive teams or boards at the corporate level—on which, of course, we hope the CIO has a seat."

2. The Standards Committee sets technology policies and makes architecture decisions. "These sort of struggled for a bit but have come back," notes Earl. "People realized that architecture matters, and getting the right standards and policies in place is an important function. But it can't be left to the IT people alone because the business drivers have got to feed those decisions. Plus a whole host of new technologies, led by the Internet and intranets, are raising new questions." This committee typically is chaired by a non-IT vice president. "The CIO has got to be quite political about this—enlisting the right people to be informed about the area and to own its decisions," says Earl.

3. The IS Department Committee plans and controls the mission and performance of IS departments in enterprises where IT functions as a business within the business, with its own executive committee or shareholder advisory board, and is staffed with a mix of IT employees and end users. "These are starting to reappear," says Earl. "It's not something every corporation should have, it's an obvious thing to do if you start to run IT as an arm's-length business."

4. The Forum is an education or publicity machine aimed at demonstrating new ideas and technologies and sharing experiences across divisions. "These activities are largely being absorbed into businesses," says Earl. "That's good because, in some ways, the worst thing you can do is have big events that keep saying 'IT is special.' It's better when you can share the spotlight with other areas, and use the forum to prepare your group for this type of interaction."

—D. Pearson





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Edited by Howard Baldwin

The Gaps in Systems Management

*A familiar dilemma:
best of breed versus all in one*

BY PETER RUBER

SENIOR NETWORK SOFTWARE ENGINEER Matt Douglass says he is going through a fun period in his career. But what a strange idea of fun. He's participating in the integration and systems management of three data centers and three disparate wide area networks serving 320 managed care facilities across the United States—the culmination of a triple merger last spring that created Foundation Health Systems Inc. in Woodland Hills, Calif.

In the first phase, Douglass consolidated the systems management under the centralized monitoring capability of TME 10 NetView from IBM business unit Tivoli Systems. That allowed him to manage a mix of mainframes, Unix systems and Windows NT servers, among other diversified platforms, scattered throughout the enterprise. "This has been going fairly smoothly," says Douglass. Since the completion of the first phase, he admits, the hurdles have gotten bigger. "Our business process requires 24/7 availability, so we're going to do a lot of testing to find the right administrative tools [for systems management across the network]."

Douglass isn't alone in his quest for an all-in-one systems management product. Thousands of IT organizations are undertaking a similar search. The continued shifts to client/server computing, corporate expansion and acquisitions have turned information systems into living, growing monsters that become more difficult to tame each year. And CIOs are walking a tightrope to find the solutions that will make their enterprises run smoothly. The problem is, the solutions don't yet exist.



Can IT organizations put their trust in all-encompassing products from the "Big Three": Computer Associates International Inc.'s Unicenter TNG, IBM's TME 10 NetView and Hewlett-Packard Co.'s HP OpenView? Or are they stuck integrating a variety of best-of-breed products? CIOs say they'd like to work with all-encompassing frameworks, but such a move is not yet practical. "Perhaps in a few years when that technology has matured," says Gerrit Schutté, senior vice president of IS infrastructure for Mutual of Omaha Insurance Co. in Nebraska.

The Big Three companies are still developing the frameworks that provide the core components for building and deploying enterprise management, but each company is building its product in a radically different way, suggests Jonathan Eunice, analyst and IT advisor for technology consultancy Illuminata Inc. of Nashua, N.H.

Computer Associates is following the Microsoft model of integrated product suites with its own application program interface (API) specifications and consolidation of

IN THIS SECTION

USB Versus FireWire

ERP Connections

Java Business Applets

Network Design Tool

ILLUSTRATIONS BY PETER COATES

third-party technology, such as the agent and help desk tools it acquired from Legent Corp.

The IBM model takes a different approach. "IBM will provide the platform, the APIs and a couple of core components," says Eunice, citing such tools as scheduling and software delivery. Then the company invites interested parties such as customers and other developers to get together and discuss the requirements. It's more akin to an open systems model.

CIOs are walking a tightrope to find the solutions that will make their enterprises run smoothly.

As for Hewlett-Packard, Eunice regards its purchase of Symantec Corp.'s Norton Administrator for Networks as a last-ditch effort to crack the framework market. "But it's a very 'late in the day' effort," he says. He views Hewlett-Packard and Sun Microsystems Inc. primarily as original equipment manufacturers (OEMs), whose primary interest is in their own hardware platforms.

It has become a fierce battle among the three models. There is much to criticize about the monolithic CA design, but it's an extremely successful economic model that is able to develop products faster than the other two. Eunice isn't comfortable with the open systems model offered by IBM "simply because of the amount of time and energy it takes for multiple parties to come to an agreement."

Can't Wait for the Future

Meanwhile, CIOs and their staffs concur: You have to get the job done today. You can't worry about what's coming three years down the road. The problems won't wait. The logical approach is to examine the capabilities of your existing tools and determine how well they integrate with your console management system. If you spot significant gaps or problem areas, you must evaluate alternative tools.

The Promise of Plug and Play...Again

But if it works, look for lower support costs

THE HOLY GRAIL OF PERIPHERAL connectivity is remarkably simple. Everyone wants to be able to plug in a new device as simply as one pops a movie into a VCR. If only the person who'd invented the electrical plug had worked on computers, too.

Windows 95 was supposed to support so-called plug and play, but it was hit-or-miss whether the peripheral was equally savvy. Macintoshes have always been pretty good about accepting external devices, but not while they're running.

The industry's trying again. In the coming year, we'll see the widespread rollout of two plug-and-play technologies: the universal serial bus (USB) and FireWire. What's the difference? Simply put, it's speed versus expandability.

The USB standard, developed by Intel Corp. along with seven other companies, lets you daisy-chain up to 127 peripherals not known for spitting bits quickly

specification calling for double that. Unlike any other previously developed standard, you'll also be able to plug and unplug devices while the computer's on.

"For CIOs, both USB and 1394 are tremendously beneficial tech-

USB VERSUS FIREWIRE

nologies," says Mark Kirstein, an analyst at market research company In-Stat in Scottsdale, Ariz. "They're part of the incremental step to making the PC easier to use, easier to maintain and easier to upgrade without having to spend a tremendous amount of time on each user's box."

Adding simpler peripherals to current machines is even getting tough to do, says Kirstein, citing the example of a co-worker who couldn't connect his handheld Pilot computer to his PC because he ran out of serial ports. "From an MIS standpoint, how much does that peripheral cost if I have to go out and buy a new serial port [card] and install it? A lot of the MIS guys might be able to walk through that pretty quick, but the users can't."

Of course, as with any new technology, there have been glitches with software drivers. Some critics believe that USB won't work smoothly until Windows 98 arrives, and FireWire is still available only as an add-in card from Adaptec Inc. While USB-capable PCs have just recently become available, even Macintoshes with FireWire on the motherboard aren't available yet.

Ultimately, you may not want to invest in new PCs and peripherals just to take advantage of USB and FireWire; you may want to sit down and calculate the ROI based on decreased costs of adding peripherals. You could be pleasantly surprised.

—Howard Baldwin



(think keyboards and mice); the transfer speed is 12Mbps. The FireWire standard, developed by Apple Computer Inc., lets you connect up to 63 peripherals that act more like firehoses (think digital cameras and scanners); its transfer speed is 200Mbps, with a future

Emerging Technology

"The historical evolution of our company has influenced the choice of some of the products we use," explains Sandra Potter, IT specialist for Air Products and Chemicals Inc. in Trexlertown, Pa. AP&C has a heavy investment in HP OpenView IT/Operations and other HP OpenView tools, which are deeply integrated within the IT architecture, but Potter says she continues to explore and test alternatives, even though she's not planning to switch. "Sometimes it makes sense to change, but you have to weigh the costs against the benefits." Such investments can be pricey—anywhere from a quarter- to a half-million dollars or more—and involve a deployment period that could last several years.

"It's almost impossible to manage our diverse systems with one or two administrative tools."

—Robert Pisano

As loyal as Potter is to HP OpenView, others are equally loyal to the TME 10 NetView or the Unicenter TNG camps and often justify their choices for the same reasons, saying the competing platforms lack tight network integration, have poor partner integration programs and

offer pricing structures that aren't cost-effective.

Whatever the reason for choosing one platform over another, these criticisms have opened the doors for companies like Boole & Babbage Inc., Candle Corp., BMC Software Inc., Novadigm Inc., Platinum Technology Inc. and others. These companies provide best-of-breed solutions for administrating such important elements as operating systems, large financial applications, databases and data warehouses. To be successful, these companies must be able to partner with the framework developers and integrate their offerings into the enterprise.

Analysts say the flexibility of competitors is forcing Computer Associates toward a more open systems model (enabling CIOs to substitute third-party solutions for some of the company's shrink-wrapped modules) and is driving IBM to aggressively add more system and network functionality to its framework.

Fortunately, when Mutual of Omaha went shopping for financial and human resources enterprise software, "we judged the selection of PeopleSoft [Inc.] to a large degree on its relationship with Computer Associates," says Schutté, senior vice president of IS infrastructure for Mutual of Omaha Insurance Co. in Nebraska. If vendors want to sell their products to Mutual of Omaha, they have to demonstrate that their products slide into the Unicenter TNG framework for more effective management of operating parameters. If they don't, they're given an opportunity to adapt them.

For the most part, partnership programs are moving ahead at full speed. Third-party tools developers say that IBM and CA routinely make software development kits, APIs and training seminars available to the industry. These kits and APIs aren't just being used by third-party systems and network management tools developers. Application vendors and in-house development staffs are using them to "instrument" their appli-

LEADING

EDGE

Progress with Process

WHEN WE LAST TUNED IN TO THE CHALLENGE OF getting enterprise applications to talk to each other ("Crossing No Man's Land," CIO Section 1, Dec. 1, 1997), getting information out of an Oracle database and into a PeopleSoft human resources application was no picnic. It still isn't. But CrossRoads Software Inc. in Burlingame, Calif., is taking aim at the problem. Its new series of modules—dubbed "processware"—provides a bridge not only between applications from The Baan Co., PeopleSoft Inc. and SAP AG but also between those applications and other products. These modules implement business rules and logic not found in the underlying applications, encapsulating them so that they can collaborate with another independent application. These modules reside in the CrossRoads InterChange Server, which runs on Microsoft Corp.'s Windows NT (connected databases, however, can be running on different operating systems).

First out of the chute is its **Crossroads Customer Interaction**, an application that links enterprise resource applications with customer-interaction applications from Aurum Software Inc., Clarify Inc., Scopus Technology Inc., Trilogy Development Group Inc. and The Vantive Corp. Applications from Oracle Corp. and Siebel Systems Inc. will be added soon, and further down the line the company plans to release modules for human resources and supply chain management. The price is based on the configuration of the components—modules, number of database connections and other variables. Typical configurations have ranged from \$250,000 to \$1 million. For more information, call 650 685-9966 or visit www.crossroads-software.com.

Java Apps To Go

EVER NOTICED THAT USERS RARELY TAKE ADVANTAGE of all the features in those humongous software suites? Instead of offering bigger office suites, Lotus Development Corp. of Cambridge, Mass., is offering a downsized group in its new eSuite applets. They encompass every productivity application most users need—word processing, e-mail, spreadsheet, calendar, chart, presentation graphics and address book—but they're Java-based, which means they're small and relatively simple.

Lotus's goal is to reduce the cost of deployment, maintenance and support for desktop users, while increasing the speed with which Internet-, extranet- or intranet-based applications can be built. Bundled with the eSuite DevPack development toolkit, these applets can be incorporated into any PC or network computer that supports Java 1.1.

The applications run under the **eSuite WorkPlace** software, a desktop that incorporates a Web browser, 3270 and



5250 terminal emulation, far from HBM mainframes and minicomputers, and a file manager. The DevPack also includes tools for sharing data between applets and pulling data from legacy systems. The eSuite WorkPlace will be available in early 1998 for \$49 per user. For more information, call 617 577-8500 or visit esuite.lotus.com.

Simplify Network Design

DESIGNING A NETWORK ON PAPER AND DEPLOYING the real thing successfully are two different things entirely. Think of it as seeing something in two dimensions and then seeing it in three dimensions. Advanced Visual Data Inc. in Waltham, Mass., hopes to help bridge the gap with its new design tool, **NetCracker Designer**.



Targeting network professionals at all levels, NetCracker Designer lets users design, demonstrate, validate and document networks—as well as compare different configuration options—before investing in equipment. An animation feature lets users watch simulated network traffic and see how it behaves in certain situations. The software automatically checks to confirm network nodes are properly connected and includes a database of network devices from which the design can be built. The software can help create data, voice or video networks.

Priced at \$1,995 for a single-user license, NetCracker Designer is currently shipping for PCs running Windows 95 and Windows NT. NetCracker Professional, a version with sophisticated simulation as well as analysis and design tools, is scheduled to be released by summer 1998. For more information, call 781 736-0860 or visit www.avdinc.com.

cations. They can embed dozens of performance metrics into their applications to monitor these applications proactively at the administrator's console, just as they would monitor a router or a server.

Fewer Choices, More Integration

The reality of the situation is that there is no one-size-fits-all solution. "It's almost impossible to manage our diverse systems with one or two administrative tools," says Robert Pisano, former project manager for system integration at Ameritech Inc. in Arlington Heights, Ill.

Ameritech has integrated HP OpenView, Sun Microsystems' Solstice SunNet Manager, Cisco Systems Inc.'s CiscoWorks, Bay Networks Inc.'s Optivity and other tools into its network fabric to monitor lower-level networks and their elements. All events and threshold alerts feed into a ticketing system that Ameritech has built into Boole & Babbage's Command/Post. The order in which systems are adjusted or fixed depends on the severity of the alarm and whether those systems are mission-critical.

"If we didn't integrate all the administrative reports into a single console," Pisano says, "we'd need an army of technicians to monitor multiple Command/Post sessions and another army of technical people to solve the problems."

The kind of consolidation Ameritech has done at the console level is indicative of what's happening on the vendor side, says Illuminata's Eunice. "Administrative tools vendors are merging in order to acquire the strongest technologies." But, he adds, niche players like Boole & Babbage are much more pragmatic—they're not trying to fight the framework wars. "They're telling prospective customers to pick the framework they want and they'll fit in there." They also fit better into IT budgets.

A Browser in Your Future

Despite advances in enterprise management capability, IT organizations are still concerned that too often the industry grips the coattails of the latest hot technology instead of adding greater functionality to existing tools or working toward a common interface standard.

But Web-based browser technology is on the horizon, and that may help heal the wounds where an interface standard is concerned. Pisano predicts that IT organizations will benefit in two ways from a Web-based interface. "The cost per seat should go down because you won't have to maintain a separate piece of software at all user stations, and training time and costs will be greatly reduced." He also feels that because the Web-based interface can view command and operational structures uniformly, administrators will be able to obtain a global view of their networks as well as upstream and downstream relationships to outages.

While framework developers continue to pack more features into their already bloated products, a combination of best-of-breed solutions still rules IT kingdoms. **CIO**

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“NCD is an overnight success at FedEx.”



It's no surprise that Federal Express uses the latest technology to stay one step ahead. NCD delivered desktop solutions for FedEx.

Recently, Federal Express Corporation (FedEx) replaced nearly 3,000 terminals with NCD HMX desktop devices at 15 customer service sites across the U.S.

According to Dave Barnwell, Federal Express Corporate Director of Customer Service Technology Systems, there were three criteria for the new desktops: “First, they had to improve the job design of the Customer Service Reps. CSRs had to like it more, and have their job enriched by having it. NCD met that. Secondly, they had to improve customer service. They are doing that. Finally, it had to pay for itself. It's done that, too.”

“Centralized maintenance was also a big issue. When you think about 15 sites and that number of seats...” Now, FedEx CSRs have 17” color monitors and are running mainframe apps, customer service apps, WinCenter (which delivers MS Office apps) and the Internet. “In essence, I have four different computers, all in one desktop device.” said Barnwell. “We would make the same decision again, (NCD) turned out to be less expensive and easier to support.”

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Working Smart

MAXIMIZING THE PAYOFF FROM I.T.

ANY STUDENT OF SUPPLY-SIDE economics will tell you that to succeed in the marketplace, you need to increase production to meet demand. In the collectibles business, however, the opposite is true: Success comes from creating a perception of scarcity. But given the fickleness of the collector's market, it's often difficult to determine the optimum allocation of products for each location.

Dan Barth, vice president and CIO of Dallas-based Pinnacle Brands Inc., which markets several brands of sports trading cards, knew the company needed a better allocation strategy if it hoped to protect the value of its collectible merchandise. The company decided to replace its "gut feeling" approach to product distribution with analytical tools to help the sales force better manage its territories.

Before automation was introduced, Pinnacle had no distribution control, according to Barth. The field e-mailed information about inventory levels and prices (regarding Pinnacle's products and those from competing companies) gathered from store displays. Sales staff at the home office rekeyed the data into a central database that officials used to forecast demand, set production levels and calculate allocations. Because sales reps had limited access to the database before taking orders, they prepared for pending sales calls by e-mailing ad hoc queries for analyses on particular customers. As much as a week later, the reps received responses answering only specific questions and leaving no opportunity for follow-up queries. This resulted in inaccurate sales data, which meant reps shut out products to some customers while sending others more inven-

Pinnacle Brands' Sales-Force Automation System

Vital Statistics:

- **Organization:** Pinnacle Brands Inc., Dallas
- **Application:** Automated sales-force management system
- **Technologies:** XcelleNet Inc.'s RemoteWare suite of applications; Cognos Inc.'s PowerPlay OLAP tool and Portfolio and Impromptu reporting tools; Lotus Development Corp.'s Lotus Notes and Lotus Notes Mail; Microsoft Corp.'s Microsoft Office; Oracle Corp.'s Financials applications suite
- **Sponsor:** Dan Barth, vice president and CIO
- **Objective:** Provide timely information to sales force about customer selling activity; improve accuracy of product allocation; enhance territory management
- **Payoffs:** Enabled delivery of daily sales analysis on demand; improved product distribution accuracy by 90 percent

tory than they could sell.

In October 1996, Pinnacle launched a sales-force automation system to give the field sales force on-demand access to information about customer buying patterns and product activity by sport, brand and price point. The sales force uses the data to determine the best retail channels and the optimum inventory for each location.

The new system—which employs XcelleNet's RemoteWare communication software to transmit customer and product analyses from a Cognos relational database, Lotus Notes and Mail and PowerPoint sales presentations—gives field salespeople equipped with Compaq notebooks the timely support data they need to sell product appropriately. The central database has been replaced by a database built using

Oracle's Financials applications suite. Pinnacle is now "able to much more effectively distribute product to channels that demonstrate more profitable sell-through," says Barth. By having ready access to the most recent delivery and sales figures, reps can better allocate products. For example, customers who bought 100 cases of cards but returned 20 would be allocated 85 or 90 cases on the next sales call.

Pinnacle now maintains product value by accurately supplying its channels just short of demand. "Our accuracy of distribution has increased about 90 percent," Barth says.

Barth also credits the system with helping Pinnacle time merchandising strategy more effectively. Armed with detailed analyses, sales reps are better able to convince retailers to participate in year-long programs that include cards for baseball, hockey, football and basketball. "It's a good way to protect our shelf space at an outlet because as demand peaks and ebbs, we're constantly replacing one hot product with the next," he says.

According to Barth, the RemoteWare communication technology has enabled Pinnacle to transmit more information to the field without increasing dial-up connection time. "We're giving our sales force concrete information to override gut intuition and manage their territories more effectively," he says. In a business where shelf life is short and value is based on perceived scarcity, Pinnacle is using technology to help turn popular products into prized collectibles.

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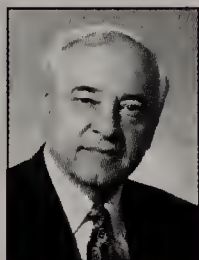
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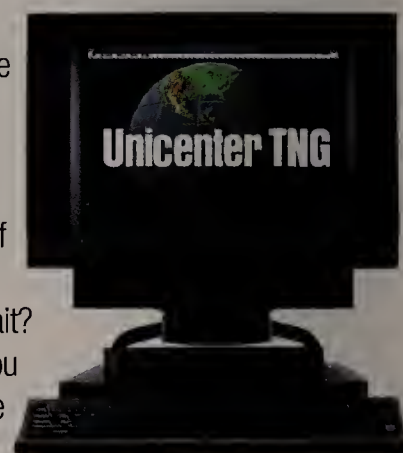
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